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AMERICAN
RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, FINANCE,

INSURANCE, BANKING, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

SATURDAY, JUNE 4, 1859.

Second Quarto Series, Vol. XV., No. 23.---Whole No. 1,207, Vol. XXXII.

ESTABLISHED IN 1831.

NEW-YORK:

PUBLISHED WEEKLY, BY

JOHN H. SCHULTZ & CO.

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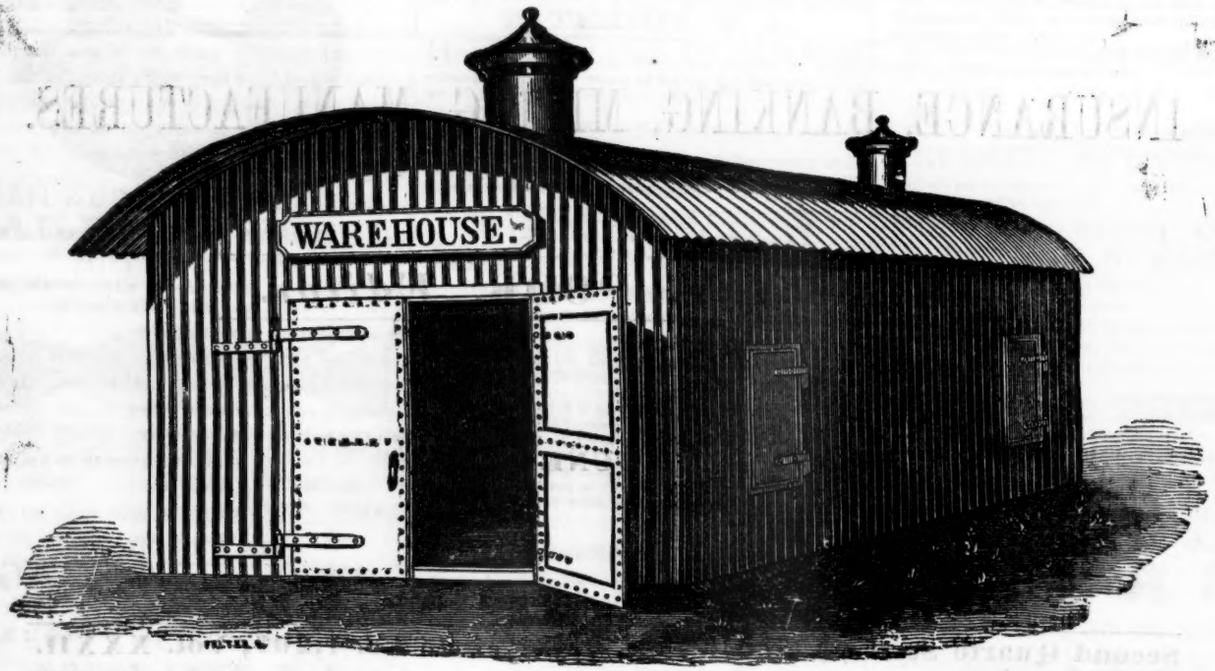

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☞ MESSRS. ALGAR & STREET, No. 11 Clements Lane, Lombard Street, LONDON, are the authorised European Agents for the *Journal*.

PRINCIPAL CONTENTS.

New York and Erie Railroad.....353
North-East and South-West Alabama R. R....353
New Orleans, Opelousas and Great Western R.R.354
Journal of Railroad Law.....355
Cleveland and Toledo Railroad.....355
Iron Trade of the United States.....356
Southern (Miss.) Railroad.....357
Racine and Mississippi Railroad.....357
Treatise on the Principle of Civil Engineering as Applied to the Construction of Wooden Bridges.....358
Railroad Reports.....360
Boston, Concord and Montreal Railroad.....360
Mississippi Central Railroad.....361
Illinois Central Railroad.....361
Regulation and Economy of Steam Engines..362

American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO. No. 9 SPRUCE ST.

New York, Saturday, June 4, 1859.

New York and Erie Railroad.

Affairs on this road appear to be rapidly coming to a crisis, with a result which threatens the loss of a very considerable portion of the capital invested in it. It is perhaps needless to comment upon the causes which have brought about the present state of things. To describe briefly the condition of the company, we may say that it is without credit; is unpopular throughout the country; has its revenue largely reduced; has neither harmony in its councils nor the hearty good-will and co-operation of the great body of employees in its service. It has been steadily losing ground in all these particulars for two years past. Such being the fact, the alternatives that seem inevitable are—either that the road must go into the hands of the mortgage bondholders, or into new hands, under the hope that with the inauguration of a new system, or policy of management, it can at least be made to pay the interest on its entire debt.

Can such a result yet be secured? We think it can. We assume, what no one we believe will question, that with a proper system of management, the earnings could be easily carried up to $6,000,000. Forty per cent. of this amount would produce $2,400,000—a sum equal to the interest on $33,000,000—$4,000,000 more than the present debt of the company.

How is such a result as this to be effected? *By leasing the road to a private company to operate it on their own account.* Such is the confidence felt in it by those best able to form a correct opinion of its merits, that we are assured a party entirely competent to such a task, both by their means and railroad experience, and entitled to carry with them the public confidence, stand ready to take a lease of the road for a period of 10 years, agreeing to pay therefor a sum equal to the interest on the entire indebtedness of the company; and to maintain the road, and deliver the same, at the termination of the lease, in as good condition as received. We have, in fact, authority to make such a proposition, and to make known the names of the parties, should there seem to be any disposition, on the part of the stock and bondholders, to favorably entertain such a proposition.

The parties to whom we refer are thoroughly acquainted with the resources of the road, and reason, in the premises, in this manner: Assuming that it can be run by the company at 70 per cent., they believe that, as private individuals, they can make a saving on current expenses of at least 10 per cent. That at the same time they can, by pushing the business, add very largely to the present revenues. Under this conviction, they are prepared to take the road on the terms proposed, and assume the proper responsibilities.

As a condition precedent, the road shall be put in good repair, and its exact condition ascertained. To determine whether it was well maintained, it should be thoroughly examined once a year. We see no difficulty in the way of protecting the rights of all parties. Those having the road in charge would have only one object, that of making the most money out of it for a long series of years, and would manage accordingly—not by certain preconceived dogmas which are made, by an iron will, to apply to every variety of case. The difference between the management of the road as a private enterprise, or by such organizations as at present prevail, is the difference which results from attending one's affairs in person, or by deputation—In other words, the difference between success and failure. While we believe the plan proposed would have been vastly better for the interest of the company in its most prosperous days, we see no other way of saving it at the present time. Whether Mr. Moran remains in the road or goes out of it, the result will be pretty much the same, without a radical change for the future. As far as he is concerned, he does not seem to see, what is apparent to every one else, that the battle is lost. Had he every qualification for the post he occupies, it would not help the matter. He has alienated the popular favor, and lost the confidence and prestige of success. There is no time in which to recover the ground so lost. In one year more, as matters are going on, the road will be in the hands of receivers. It will then be worth to its owners about as much as a ship on shore, and in the hands of *wreckers*. We warn all classes of bondholders not to suffer such an event to happen. If the road, to use a nautical phrase, can be kept off the breakers, it has the capacity of carrying the entire load with which it is charged. If it once gets into the clutches of the law, it will become an object of common plunder, which may leave nothing to any class of creditors. To avoid a catastrophe which so seriously threatens, why not place the roads in the hands of parties who will manage it with ability and integrity, as the truest and best method of making the utmost penny out of it?

Shall there be a response to the proposition now presented?

North-East and South-West Alabama R. R.

The line of this road commences at Chattanooga, Tenn., and runs thence diagonally across Alabama 295 miles, to Meridian, on the Mobile and Ohio railroad, 135 miles north of Mobile, and about 75 miles east of Brandon, Miss., the present eastern terminus of the Southern Mississippi road.

The heavy earth work on the first 100 miles, between Meridian and Tuscaloosa, was let to contract in 1856, to be completed in the fall of 1859. Most of this work will be done within the time stipulated, and the balance as soon thereafter as required. The contracts were for the most part in payment of subscriptions to the stock of the company; but in a few cases the work was to be paid for partly in cash, and partly in stock.

The work upon the upper portion of the line, between Chattanooga, and the northern boundary of St. Clair county, is being prosecuted under the charter of the Wills' Valley Company. Although an agreement has been entered into, to consolidate the stock of these companies, it is deemed inexpedient to consummate the arrangement at present, as it might have a tendency to release from liability each subscriber to the stock who did not personally assent thereto. When the stock shall be finally paid up, the arrangement can be perfected without embarrassment to either company. This portion of the line is 88 miles in length, 67 miles of which are under contract, and in progress—the grading and culverting being provided for to that extent.

The entire amount of earth work and culverting between Meridian and Tuscaloosa, done and to be done, at the date of the company's report, 16th December last, was $576,280
of which there had been done and paid for in stock $155,122
In cash 105,010
260,132

Leaving to be done $316,148
To be paid for in stock 121,144

In cash $195,004
The bridges across the Warrior and Tombigbee rivers, to be completed Jan., 1860, will cost about $124,000
of which there has been paid in cash 7,160
116,840

$311,844

To meet which the company has:—
Of good subscriptions unpaid .. $266,600
Cash 23,796
290,396

Leaving $21,448
Add officers, salaries to Jan. 1, 1860 25,000

Showing a deficiency of $45,448
Add for small bridges and trestle work $242,000
Less subscriptions in land, cross ties, and lumber 20,230
221,770

Which shows that there is still required. $268,218 to prepare the road for the iron to Tuscaloosa.

The subscriptions available for the construction of the road from Tuscaloosa to Elyton amount to $239,345
The estimate for the grading is 323,100

Showing a deficiency of $83,750

In order to cover this deficiency, the Chief Engineer proposed the establishment of temporary exceptional grades, say 90 feet to the mile, upon six miles of the route next above Tuscaloosa, whereby a saving of about $87,000 may be effected. This amount expended upon the line between Tuscaloosa and Elyton, will suffice for the grading to that point. The balance of the distance to Mills' Creek, 56 miles, with the exception of subscriptions to the amount of $24,250, is almost entirely unprovided for.

The bridges across the Tombigbee and Black Warrior rivers, are being constructed by Messrs. DERBY, of Chicago. They were let to contract in July last, and are to be completed by January 1, 1860. The MCCALLUM plan was adopted for both, and arrangements made for having them framed and put up under the immediate supervision of an agent of the patentee. In reference to this bridge the Chief Engineer says: "This plan of bridge has been so thoroughly tested as to leave no doubt on my mind, that it is, for our purposes, and generally, the best plan of wooden bridge now in use."

The following is a statement of the receipts and disbursements during the year:—

RECEIPTS.

Amount in treasury, Jan. 1, 1858	$11,696 76
From subscribers to Dec. 8, 1858	105,760 65
" interest account	511 38
" miscellaneous sources	2,029 48
	$119,998 27

DISBURSEMENTS.

For graduation and masonry	$53,057 38
" work on bridges	7,171 17
" labor	3,070 17
" right of way	2,825 00
" salaries, office exp,, int., com., etc.	16,474 41
" bills payable June 1, 1859, in treas.	24,946 66
Cash in treasury	11,853 48
	$119,998 27

OFFICERS.

N. L. WHITFIELD, *President.*
R. E. RODES, *Chief Engineer.*
H. A. SNOW, *Treasurer.*
WM. S. FOSTER, *Secretary.*

New Orleans, Opelousas and Great Western Railroad.

The line of this road is 258 miles in length. It commences at Algiers, opposite New Orleans, and runs thence, via Brashaer, New Iberia, Opelousas and Pine Prairie, to Thompson's Bluff on the Sabine river, in lat. 31°. At this point the line of the Sabine and Rio Grande Railroad commences, which is to run in a south-westerly direction, via Clarkesville, Huntsville, Henderson and San Antonio, to some point on the Rio Grande, suitable for its extension and construction through the Mexican States of Coahuila, Durango and Sinalou, to the Pacific seaport Mazatlan. About nine miles of the line of the Sabine and Rio Grande Railroad, from the Sabine river to Burkesville, was surveyed and located in December last, and work thereon commenced. At Burkesville commences the line of the Texas Great Western Railroad, running north-west to Dallas, and thence to Red River. The town of Dallas will probably be the point of intersection of the Great Western Railroad with the Southern Pacific, the Memphis and El Paso, and the Houston and Texas Central Railroads.

The north-western, north-eastern and northern counties of Texas, or that portion north of the Sabine terminus of the New Orleans and Opelousas Railroad, constitute by far the most fertile, populous and wealthy portion of the State. The Sabine river alone, which penetrates far into those counties, and which is navigable for steamboats carrying 1,000 bales of cotton for several hundred miles above Thompson's Bluff, will, without the construction of the Great Western Railroad, throw the trade of all this section of country upon this road, which strikes the eastern boundary of the State just at the lower limit of this fertile producing region, which, according to the Texas Almanac for 1859, is capable of producing 60,000,000 bushels of wheat, and of making and exporting flour one month earlier than can be done elsewhere in the United States.

The report of this company for 1858 gives the following comparative statement of the gross earnings of the road as far as completed, viz.: from Algiers to Brashaer, or Berwick's Bay, a distance of 80 miles:

	1856.	1857.	1858.
January..	$16,095 18	$18,068 33	$33,249 64
Feb.	20,568 59	22,704 77	30,385 95
March....	15,603 54	15,803 69	32,629 01
April.....	18,392 74	22,460 59	
May	14,520 00	23,340 06	
June.....	12,788 47	19,345 38	
July	15,687 20	20,989 15	39,630 77
August...	14,704 96	22,871 35	
Sept.	18,816 20	24,330 69	
October ..	18,650 17	30,766 47	
Nov..	18,857 02	28,229 77	40,962 55
Dec..	21,681 37	35,267 59	48,719 30
	$206,365 44	$284,177 84	$225,577 22

It will be observed that during seven months of the past year, from April to October, inclusive, scarcely one month's business was done; this was owing to the fact that a considerable portion of the track was inundated during that time, causing an entire abandonment of the freight business, although the passengers and mails were conveyed by steamboats and mail coaches past the overflowed portions of the track, without serious inconvenience, or detention of either. The damage done to the road bed and track, was but trifling, and was repaired as the water receded. In the meantime the rolling stock was overhauled, so that the road and its equipment is now in a condition to do all the business that may offer with profit to the company, and satisfaction to the public. The earnings of the road during the year were as follows:

From passengers.	$64,390 28
" freight..	144,263 42
" mails.	16,464 32
" express	459 50
Total	$225,577 52

The distance from the present terminus of the road to the Sabine is about 178 miles; the whole line is staked out, the crossing on the Sabine fixed, lands entered for depots, etc., and nothing remains but to raise the means for its construction. For the accomplishment of this, bonds were prepared in 1857, based upon a mortgage of the road to Berwick's Bay; but owing to the financial trouble of that year, the company were unable to negotiate a sale of them; they were equally unsaleable in 1858, while the track was inundated. They now propose to withdraw this issue of bonds, none of which have been disposed of, and substitute therefore, others at from 20 to 30 years, and these are now being prepared. The floating and mortgage debts together, which were in 1857, $750,000, are stated in the general financial statement of 1858, at $518,330 93—this has since been reduced to $470,348 39.

To clear off the greater part of this indebtedness, the company have arrears of stock and tax subscriptions due, which together with the State quota, some real estate, and the estimated net earnings of the year, will be sufficient for that purpose. For the continuance of the road to the Sabine, the company propose to issue $2,000,000 of bonds, secured by a first mortgage of the complete and separate first grand division of the road, terminating at Berwick's Bay, and sales of lands between New Orleans and Opelousas; the interest to

be provided for by special monthly deposits in bank, secured against withdrawal for any other purpose, and from sales of about 500,000 acres of land beyond Opelousas. A sinking fund is also to be established for the final redemption of the bonds.

GENERAL FINANCIAL STATEMENT.

		Dr.
Private stock		$656,629 70
City and parish taxes		346,329 91
New Orleans subscription in bonds		1,500,000 00
Louisiana " "		621,000 00
Passenger earnings	$315,180 94	
Freight "	514,693 07	
Mails "	24,196 71	
Express "	1,959 51	
		856,030 23
Bills payable		518,330 93
Sundries—pay rolls, etc.		31,665 97
		$4,529,986 74
		Cr.
Construction		$2,302,808 35
Depots and stations		217,274 81
Bridges		88,551 07
Rolling stock		362,291 41
Machinery		17,249 24
Maintenance of way		230,367 04
Real estate		43,779 30
Steamboat and barges		24,246 30
Discount State and City bonds		308,113 24
Interest		271,956 85
Expenses		164,093 89
Right of way		12,900 15
Transportation expenses		396,172 45
Bills receivable	$13,353 24	
Cash	76,829 40	
		90,182 64
		$4,529,986 74

OFFICERS:

Wm. G. Hewes, *President.*
A. B. Seger, *Vice President.*
Benj. F. Flanders, *Treasurer.*
G. W. R. Bayley, *Chief Engineer.*

Journal of Railroad Law.

CORPORATE SUBSCRIPTIONS TO RAILROAD STOCK—COMMISSIONER'S CERTIFICATE.

In our last issue we referred to the late case of Oelrichs *vs.* The City of Pittsburg, involving the validity of subscriptions by a municipal corporation to railroad stock. In connection with the questions there discussed, a decision rendered in the New York Supreme Court, between the Bank of Rome and the village of Rome, will be found to possess interest.

The facts of that case were as follows:—In 1853 the Legislature of New York passed an act, empowering the president and trustees of the village of Rome to subscribe for, take and hold stock in the Ogdensburg, Clayton and Rome Company, to an amount not exceeding $150,000. This stock was to be paid for by bonds of the corporation. Five commissioners were appointed by the act, who were empowered to sell the bonds, or exchange them for stock in the railroad company. But it was provided that these commissioners should have no power to negotiate, sell or transfer such bonds, or create any liability, except upon the express condition that $500,000 should have been first subscribed by others to the capital stock of the railroad company; and that, before negotiating or transferring any of said bonds, the commissioners should make and subscribe a certificate in writing, that such subscription of $500,000 had been actually made, and that, in their judgment and belief, the same had been made in good faith, and by persons able to pay their subscriptions. This certificate was directed to be filed with the clerk of the village.

The commissioners made and signed and filed the certificate prescribed by the act, and subsequently negotiated some of the bonds. In course of time an action was brought against the village of Rome, upon one of these bonds. The village corporation defended in part, upon the ground that the certificate of the commissioners was untrue; that there had not been $500,000 subscribed in good faith before the bonds were negotiated; and therefore, they contended, the bonds were invalid.

But the court held that the making and filing the certificate by the commissioners was *conclusive* on the parties as to the facts stated in it; and that the village corporation could not go behind the certificate, and show that, in point of fact, valid subscriptions to the amount stated had not been made.

The following are the principal reasons assigned by the court for this decision:

Bacon, J.—After stating the facts. My opinion at the circuit was, and still is, that the act intended that this certificate should furnish the evidence, and be held declarative of the fact, that such subscriptions had been made—that these commissioners, who acted as the representatives in effect and on behalf of the defendants, were expressly constituted by the act, the parties to examine and become satisfied that the amount required by law had been subscribed to the stock of the company, and it never could have been the intent of the law makers that every dealer in the bonds of the village should take them at the risk of having them declared invalid, if it should turn out that for some reason, utterly unknown to him, and incapable of ascertainment by any means within his control, a portion of the subscriptions (it might be to the amount of a hundred dollars) was invalid, or incapable of being collected. It cannot be that every holder of these bonds may be called on to litigate not only the amount, but the *bona fides* of every subscription up to the $500,000, which the railroad were required to have before the commissioners could be called upon to make their certificate and negotiate the bonds. If such a contingency had been supposed to be attached to the possession of these bonds, it may safely be affirmed that not a dollar of them would ever have passed from the hands of the commissioners. I do not say that this might not ultimately have been highly to the advantage of the citizens of Rome; but we must remember that at the time of the passage of the act in question, it was deemed to be greatly to the benefit of the inhabitants of that village, that the railroad should be rapidly pushed forward, and they probably felicitated themselves on the great gains and profits which were likely to accrue to the corporation from holding the interest on their bonds, but ultimately contribute to the village a handsome annual surplus above the interest, by way of dividends on the stock subscribed to the road by the village authorities. Time has, of course, served to dispel these visions; but they were not the baseless fabric they have since become, at the time these bonds were issued and the subscription made, to meet which they were executed. The strong desire of the defendant was to raise money on its negotiable bonds, and the object of the law was not to create obstacles in the way of the attainment of that desire, but to facilitate its accomplishment. But no man would have been insane enough to take these bonds, if he supposed that upon him was to be cast the burden of sustaining, by proof, not only the good faith with which the subscriptions were made, but the actual ability of every person, whose name appeared on the roll, to pay his subscription. In my judgment, the act intended to provide a simple process, as well as a decisive test, by which not only the defendant should be saved from imposition, but every holder of, or dealer in the bonds, should be warranted—on ascertaining that the certificate had been made and filed pursuant to the act—in dealing freely in them, without incurring the extraordinary risk of having them defeated by showing, either that the commissioners were imposed upon, or were themselves participants in a gross frand upon the public.

These commissioners were the agents of the defendant, and their act was substantially the affirmation of the defendant, that the conditions of the act had been complied with, and as between them and the innocent holders of the bonds, it creates a moral, if not a legal, estoppel of the most emphatic character.

Cleveland and Toledo Railroad.

The annexed circular has been issued by the Cleveland and Toledo Company:

Cleveland & Toledo R. R. Co. Office,
Cleveland, May 23, 1859.

To the Stockholders of the Cleveland and Toledo Railroad Co.:

Erroneous reports having lately been circulated for some unapparent purpose, in regard to the affairs of this company, and that various law suits had been commenced against it by the towns along the Northern Division, and that the floating debt had largely increased, &c.; it is deemed proper, in advance of the regular annual statement, to correct any wrong impressions that may have arisen from such sources.

No suits have yet been commenced against the company by any of the towns along the Northern Division.

The floating debt is less than it was at the time of the annual report a year ago. The bills payable of the company, May 1, 1859, were $341,636,09.

The business of the road, sympathizing with the general prostration felt in the Western States, has been exceeding depressed, and the earnings show a large falling off from previous years. The running expenses, however, have been more than proportionately reduced.

The earnings for the past year, ending May 1. 1859, (partly estimated,) were $797,432 84, about $350,000 less than for the year ending June 1, 1857.

The running expenses for the past year, (partly estimated,) were $398,858 25, about $160,000 less than for the year ending June 1, 1857.

The running expenses at present are about $30,000 per month. The interest on the entire bonded debt has been met as it became due.

There have been purchased by the Commissioners of the Sinking Fund, during the past year, $25,700 of the company's outstanding bonds for the sinking fund account.

Very respectfully,
J. B. Waring, *President.*

The result of the year's business, from these figures, would be as follows:

Gross earnings	$797,432 84
Expenses, 50 per cent	398,858 25
Total	$398,594 59
Interest on bonded debt, sinking fund and lease of Cleveland, Columbus and Cincinnati road	$354,700
Net earnings	$43,974 56

Iron Trade of the United States.

We copy from Lesley's Iron Manufacturer's Guide the following statement, prepared by Chas. E. Smith, Esq., Iron Manufacturer of Philadelphia, showing the production and consumption of Iron in the United States for the year 1856:

1.—*Product of Anthracite Pig Iron in* 1856.

	Furnaces.*	Tons.
Massachusetts	3	4,443
Connecticut	1	1,000
New York	14	47,257
New Jersey	4	26,117
Pennsylvania	93	306,972
Maryland	6	10,720
Total anthracite	121	396,509
1856, average value $25 in Phila.,		$9,862,725
1858, " " 20 "		7,890,180

Product of Coke Pig Iron in 1856.

Pennsylvania	21 furnaces,	39,953
Maryland	3 "	4,528
Total coke	24	44,481
1856, average value $25		$1,112,025
1858, " " 21		934,101

Product of Raw Bituminous Coal Pig Iron in 1856.

Pennsylvania	6 furnaces,	8,417
Ohio	13 "	16,656
Total raw coal	19	
1856, average value $25		$626,825
1858, " " 21		526,533

Product of Charcoal Pig Iron in 1856.

	Furnaces.	Tons.
Maine	1	2,100
New Hampshire	1	0,000
Vermont	5	2,420
Massachusetts	7	8,564
Connecticut	14	12,876
New York	29	21,774
New Jersey	6	2,100
Pennsylvania	143	95.154
Maryland	21	26,470
Virginia	39	14,828
North Carolina	3	450
South Carolina	4	1,506
Georgia	7	2,807
Alabama	3	1,495
Tennessee	41	28,476
Kentucky	30	36,563
Ohio	41	70,355
Indiana	2	1,800
Illinois	2	1,900
Missouri	7	10,138
Wisconsin	3	2,500
Michigan	7	3,678
Total charcoal	416	
1856, average value,	$30	$10,465,620
1858, " "	24	8,392,496
Total product of pig iron in 1856		812,017
Total number of furnaces running, or in running order		580

Product in Blooms and Bar made direct from the Ore by the Bloomery or Catalan Process in 1856.

	Bloomeries.	Tons.
Vermont	5	1,650
New York	42	18,710
New Jersey	48	4,487
North Carolina	36	36,182
South Carolina	2	640
Georgia	4	40
Alabama	14	252
Tennessee	50	1,222
Michigan	3	450
Total product of	204	28,633

Of this quantity 7,000 tons were bars.
21,633 " " blooms.

1856, average value $50 00	$1,081,650
1858, in Troy, N. Y.† 37 50	811,237
Grand total product of iron from the ore, 1856	841,550

† The largest market for this kind of iron.
* The works here set down are only those running, or in running order.

2.—*Statement of the total quantity of iron of all kinds consumed in domestic forges, rolling mill and foundries, viz:*

Domestic product from the ore above stated		841,550 tons.
Deduct quantity sold in bars immediately to consumers by bloomeries, and therefore not entering into the manufactures embraced by this table	7,000	834,550
Scraps imported		10,323
" domestic (estimated)		25,000
Old rails		100,000
Scotch pig imported		55,400
Total		1,025,273

Of this total, excepting Scotch pig therefrom, the following are the proportion of pig, scrap and old rails respectively consumed by domestic forges, rolling mills and foundries:

Amount last stated		1,025,273
Deduct Scoth pig	55,403	969,870
By forges, product	53,244	
Waste	17,748	70,992
By rolling mills, prod't.	498,081	
Waste	124,520	
Total		622,601
Deduct blooms‡	60,877	561,724
By foundries, domestic pig	337,154	969,870

The Scotch pig imported was all consumed by the foundries in making, with the domestic pig, a total for this class of works, of 392,557 tons of pig.

It is impossible to make such an analysis of the foregoing statement as shall show, separately, the exact amount of pig, and of scrap, respectively taken by the forges and the mills; but an approximate estimate may be made. Assuming that the country, or refinery forges take no scrap; and that the others use only scrap, (which is very nearly the fact) we shall obtain the following as the consumption of domestic pig iron:

Domestic pig consumed by the forges	52,320
" " " " rolling mills.	423,435
" " " " foundries	337,155
Making the tot. stated on the previous page.	812,910

3.—*The product in* 1856, *of the forges, not bloomeries, consuming pig and scrap, was as follows:*

	Forges.	Tons.
New Hampshire	1	600
Massachusetts	5	1,850
Connecticut	6	1,950
New York	3	1,360
New Jersey	2	671
Pennsylvania	111	31,727
Maryland	2	491
Virginia	43	2,992
Kentucky	4	4,513
Tennessee	9	6,190
Missouri	3	900
Total product of	189	53,244

Of this quantity there were made into bars, car and carriage axles, locomotive tire, shafts, anchors, and various shapes, about... 14,000 tons.
And into blooms ... 39,244 "

1856, average value, Bars, etc.	$120	$1,680,000
" " Blooms,	80	3,139,520
Total		$4,819,520
1858, average value, Bars, etc.	$100	$1,400,000
" " Blooms,	70	2,747,080
Total		$4,147,080

‡ The total blooms produced from ore is. 28,633
Sold direct in bars ... 7,000
21,633
Total blooms by refinery forges ... 53,244
Made into bars and shapes ... 14,000
The waste in making which is added under the head of forges in the text. 39,244
Total blooms going into mills ... 60,877

4.—*The product of the Rolling Mills in* 1856 *was as follows:*

	Mills.	Tons.
Maine	1	4,500
Massachusetts	19	55,292
Rhode Island	2	4,475
Connecticut	5	5,759
Vermont	1	500
New York	13	55,172
New Jersey	10	28,403
Pennsylvania	91	242,484
Delaware	4	2,111
Maryland	13	14,812
Virginia	12	26,355
North Carolina	1	215
South Carolina	3	1,210
Georgia	1	900
Tennessee	3	2,680
Ohio	15	30,980
Kentucky	7	16,865
Indiana*	1	000
Illinois*	1	000
Missouri	4	4,420
Michigan	2	1,848
Total	209	498,081

5.—Looking at our subject from the point of view of consumption, we find that the following statement will represent the quantity of iron of all kinds used in every form of domestic manufacture for general consumption, viz:

Total of domestic iron produced from ore as above stated			841,550
Pig iron†	imported.	55,403	
Rolled and hammered†	"	293,275	
Scraps†	"	10,320	
Total	"		363,998
To which add by estimate, old rails reworked	domestic.	100,000	
Scrap collected and sold.	"	25,000	125,000
Grand total			1,330,548

6.—Examining the history of this total to ascertain the quantity and kinds of rolled and hammered iron, obtained from all sources, consumed in the United States during 1857, we find the following details:

	Domestic product. Tons.	Imp'd. Tons.	Total consum'd. Tons.
Rails	142,555	167,400	309,955
Boiler and sheet	38,639	15,053	53,692
Nails (2,645 machines)	81,462		81,462
Bar, rod, band & hoop.	235,425	115,822	372,247
Ham'd bars & shapes.	21,000		
Amount of finished wrt. iron which entered into gen'l consumption in 1856	519,081	298,275	817,356

7,—To ascertain the per centage respectively, of foreign and domestic iron of all kinds, which entered into general comsumption in the year 1856, we have—

	Domestic.	Foreign.	Total.
Roll'd & ham'd as above.	519,081	298,275	817,356
Pig iron	337,154	55,403	392,557
Total	856.235	353,678	1,209,913

Which results give the proportion of 70 per cent. domestic to 30 per cent. foreign.

The 21,000 tons mentioned above as domestic hammered bars and shapes were produced as follows:

By bloomeries, bars	7,000 tons.
By forges proper	14,000 "
Total	21,000 "

* Not completed at this date.
† To obtain the closest practical approximation of imports for the calendar year 1856, the official returns, for the fiscal years ending the 30th of June, 1856 and 1857, have been averaged together. The result is in the text.

8.—The quantity of foreign imported hammered iron cannot be exactly ascertained because of a change in the Treasury classification, which took place in 1854, by which rolled and hammered bars are included in one class as "bar iron." For the six years previous to 1854, the amount of hammered bars averaged about 20,000 tons, which is probably nearly correct at this time.

Domestic	21,000
Foreign	20,000
Total consumption of hammered iron	41,000

9.—Of the total domestic production of pig and rolled and hammered iron above stated, viz: 856,235 tons, the following are the quantity and value shown with reference to the various kinds of product:

1856.

		Price.	Amount.
337,154 tons	foundry pig	$28‡	$9,440,312
142,555 "	rails	63	8,980,965
38,639 "	boiler and sheet	120	4,636,680
81,462 "	nails	84	6,842,808
235,435 "	bar, rod, b'd, hoop.	65	15,302,625
21,000 "	hammered iron	125	2,625,000
856,235 "			$47,828,390

1858.

		Price.	Amount.
337,154 tons	foundry pig	$22	$7,417,388
142,555 "	rails	48	6,842,640
38,639 "	boiler and sheet.	100	3,863,900
81,462 "	nails	67	5,498,685
235,425 "	bar, rod b'd, hoop.	57	13,536,937
21,000 "	hammered iron	100	2,100,000
856,235 "			$39,259,550

The total domestic pig iron made was	812,917
Amount imported	55,403
Total pig iron consumed for all purposes	868,320

Total Number of Iron Works.

Anthracite	blast furnaces.	121
Coke	"	24
Raw bituminous coal	"	19
Charcoal	"	416
Total number of blast furnaces		580
Bloomeries		204
Forges		189
Rolling mills		209
Tot. of all kinds, run'g or in run'g order		1,182
No. of double puddling furnaces in the mills		208
" single " " "		1,054
Total number in the rolling mills, counting the double furnaces as equal to two		1,470
Number in the forges		34
Total number in the United States		1,504
Total No. of bloomery fires		442
" refinery or forge fires proper		496
" nail machines		2,645

In conclusion, it is proper to remark that the materials from which the foregoing summary has been prepared were obtained chiefly through the indefatigable industry of Mr. J. P. Lesley, Secretary of the Association, assisted by Mr. Jos. Lesley, Jr., and Mr. B. A. Lyman, during a period of nearly two years, at an expense of nearly six thousand dollars, defrayed entirely by the voluntary contributions of the members of the Iron Association.

The want of full and reliable information on the subject has been long felt, and several previous attempts has been made to procure it; but when the parties to these after more or less progress in the accomplishment of their design, came fully to appreciate the vast field which it was necessary to canvass, and the great labor and expense incident to their purpose, they abandoned it in despair.

This comprises, therefore, the first and only complete statement of the iron industry of the Union. No expense or pains have been spared to make it perfectly accurate. In so extended an inquiry some errors of detail are to be expected, and such, no doubt, will be found, although not at present known to exist. No error, however, can be discovered which will affect the general result. The tables are as accurate as it is possible, from the nature of the case, to make them.

The great facts demonstrated are, that we have nearly 1,200 efficient works in the Union; that these produce annually about 850,000 tons of iron; the value of which in an ordinary year is fifty millions of dollars. Of this amount the portion expended for labor alone is about $35,000,000.§

The amount of rolled iron made in the United States is about 500,000 tons per annum. Of this about 300,000 tons is made east, and 200,000 tons west of the Alleghany Mountains.

The annual average importation of rolled iron for the eight years from 1850 to 1857 inclusive, was about 305,000 tons, of which the Atlantic States consumed about 200,000 tons, making the total consumption of rolled iron in the seaboard States about 500,000 tons per annum, three-fifths of which is domestic and two-fifths foreign.

The 105,000 tons of foreign iron consumed in the west and south-west is nearly all composed of rails. The smaller descriptions of iron consumed there are chiefly of domestic manufacture. At least seven-eighths of all the descriptions of imported iron, except rails, are consumed in the Atlantic States.

The annual importation of railroad iron for the eight years, 1850 to 1857, averaged 202,000 tons, of which about one-half has been taken by the Atlantic States.

‡ Estimating 302,154 tons at $27, and 35,000 tons of cold blast charcoal iron for car wheels, malleable castings, and extra machinery, at $35. Average $28.

§ The proportion of labor in the price of a ton of pig iron is about 60 per cent. In rails and bar iron about 66 per cent. In the smaller and finer descriptions of iron about 75 per cent.

Southern (Mississippi) Railroad.

We learn that at the meeting of the stockholders of the Southern Railroad Company, held on the 2d inst., in this city, a very satisfactory exhibit of the company was made.

The gross earnings for the year ending January 1st, 1859, were $250,047 75, while the expenditures for the same period were $128,388 58, showing a net profit of $121,659 17.

The following is a comparative estimate of the earnings for the years 1857 and 1858, viz:

	1857.	1858.
Cotton freight	$49,897 09	588,06 14
Miscellaneous freight	118,506 93	93,548 97
Passenger account	74,923 25	63,964 03
Way fare	12,366 05	22,299 60
Mail, carriage of	5,180 32	9,949 98
Incidental receipts	3,380 90	1,479 03
	264,254 54	250,047 75

The number of bales of cotton that passed over the road for the past three years were as follows:

For 1856	101,873
" 1857	83,337
" 1858	97,949

The number of tickets sold were as follows:

For 1857	67,897
" 1858	59,257

When it is remembered that the road from New Orleans to Jackson was completed and in operation during nine months of this period, and that in the opinion of many, its completion would work serious injury to the Southern road, in directing cotton and miscellaneous freight from it, the result of the past year's business is extremely gratifying to the friends of the Southern Railroad and the city of Vicksburg. Especially is this so, when it is also remembered that the expense of keeping up twenty-three miles of new track, east of Brandon, has fallen upon the Southern road, from which no great increase of business was to be expected.

The president reported to the meeting that a ship load of the iron, which was purchased by him last fall in England, had arrived in New Orleans, and a portion of it had reached Jackson, passing over the New Orleans and Jackson road, with which a favorable arrangement had been made for the transportation of the entire body of iron, necessary for the completion of the Southern road.

The president also reported that an arrangement was in progress between the two companies, looking to a change of gauge of the Southern road, to correspond with that of the New Orleans and Jackson road, which he thought would result in an agreement to that end.

It was stated to be the confident expectation of the company to reach with the track within twenty-five miles of the Mobile road during the present year. The whole distance was under contract, and most of it graded and ready for the iron. The iron has been all purchased, and either in New Orleans, or on its way from England. Thus it will be seen that nothing but some unforseen contingency can prevent the construction of the road as stated, (to within twenty-five miles of the Mobile road,) during the present year, and to its junction with that road, by the opening of cotton season of the next year.

The stockholders ratified in detail the issuance of the mortgage and income bonds heretofore issued by the Board of Managers, and authorized then in future to issue such further bonds, mortgages and other securities as they might think for the benefit and advantage of the company.—*Vicksburg Whig, May 5.*

Racine and Mississippi Railroad.

We learn from the Racine *Journal* that the contract for doing the balance of the work from Freeport to Davis has been let to Messrs. R. B. Mason & Co., to be completed by the first of September next. The same paper states that the engineers have already commenced work; and that two gangs of hands are to be employed, one by night and the other by day, in order that the work may be accomplished within the specified time.

We learn from the Beloit *Journal* that this road has gone into the hands of the first mortgage bondholders, and they agree to build it to Freeport, to be paid for from its earnings as follows:

1. All arrearages to operators.
2. To refund the expense of completing the road, and interest at 7 per cent.
3. To pay interest on bonds.

The company to have five years from its completion to Freeport to redeem the road, and it shall be surrendered to suit the company at any time when the bondholders shall have been reimbursed from the earnings, or any other source.

The agents of the bondholders are Messrs. Thompson and Blackstone, who choose another man, and the three manage the road, making quarterly returns to the company, and their receipts and disbursements.

The interest now due is in amount about $175,000. Estimated expense of completing the road and arrearages due, operators say $200,000; coming interest next year about $90,000. The net earnings should be about $200,000 per annum to enable the company to redeem the road in five years.

☞ The State of Kentucky gives notice that the State will deposit in the Bank of America, in this city, $150,000 to redeem, on the 1st January next, the bonds of the State issued to the Lexington and Ohio Railroad, on which the power of redemption was reserved. After the day named, the interest on the bonds will cease. Notice is also given that $70,000 of bonds issued Oct. 7, 1846, and June 15, 1848, with which a similar privilege was reserved, will be redeemed at the same Bank at the end of fifteen years from the date of each bond.

TREATISE

ON THE

PRINCIPLES OF CIVIL ENGINEERING

AS APPLIED TO THE

CONSTRUCTION OF WOODEN BRIDGES.

By S. S. Post, *Civil Engineer*,

And late Chief Engineer of the N. Y. & Erie R. R.

(Continued from p. 343.)

Example E.

In the last example there was observed to be a large excess of material towards the ends of the chords, not available for strength in that form of truss. In other words, the sections of the chords, on either side of the central panels, are greater than the horizontal strains require.

Suppose another case of a truss 18 feet deep in the middle, clear span 150 feet.

Weight uniformly distributed, 225,000 lbs.

Extra weight at middle, 15,000 lbs.

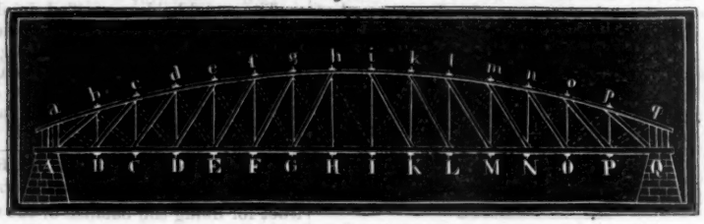
Equivalent weight at middle, 127,500 lbs., and greatest horizontal strain 265,625 lbs. as in example D.

It has been established (§ 24) that the strength of a beam is in proportion to the *square of its depth*; and (§27) that the load it can support, when applied at different points, is inversely as the *product of the segments*, into which the length of the beam is divided by the position of the weight.

If these laws apply as well to a truss, or open beam, as to a solid one, they require that at every section, *the square of its depth multiplied into the square of one half the length* of the span, shall be equal to the *square of the depth in the middle multiplied into the rectangle of the segments* into which the span is divided by that section.

Applying the maximum weight to the several sections of the truss (*Fig.* 69) the depths of those

Fig. 69.



sections necessary to support that weight, will be found as follows:

75×75	: 70× 80 ::	18×18	: 322.56	=(17.96)² at H*h*
	: 60× 90 ::		: 311.04	=(17.63)² at G*g*
	: 50×100 ::		: 288.	=(16.97)² at F*f*
	: 40×110 ::		: 253.44	=(15.92)² at E*e*
	: 30×120 ::		: 207.36	=(14.40)² at D*d*
	: 20×130 ::		: 149.76	=(12.24)² at C*c*
	: 10×140 ::		: 80.64	=(8.98)² at B*b*

These relative depths are represented in *Fig.*69, and give to the top chord between *b* and *p* the curvature of an ellipse.

This truss would be greatly improved by making all the panels of the same relative width and height, so as to maintain the parallelism of the braces, as in *Fig.* 70. But for comparison with *Fig.* 68, this form is presented.

Putting the depth A*a* and Q*q* 5.5 feet, and, adopting for each panel the weights used in example D, the lengths and oblique strains of the several braces and counter-braces may be determined.

Counter-Braces.

The lengths of the counter-braces will be:—

(5.5×5.5+10×10)½	=(130.25)½	=11.4127 =*a*B.
(80.64 + 100)½	=(180.64)½	=13.44 =*b*C.
(149.76 + 100)½	=(249.76)½	=15.804 =*c*D.
(207.36 + 100)½	=(307.36)½	=17.53 =*d*E.
(253.44 + 100)½	=(353.44)½	=18.8 =*e*F.
(288. + 100)½	=(388.)½	=19.7 =*f*G.
(311.04 + 100)½	=(411.04)½	=20.27 =*g*H.

Their oblique thrusts will be:—

5.5 : 11.4127 ::	77,000 :	159,778 lbs.	on *a*B.
8.98 : 13.44 ::	67,000 :	100,276 "	" *b*C.
12.24 : 15.804 ::	57,000 :	73,597 "	" *c*D.
14.4 : 17.53 ::	47,000 :	57,216 "	" *d*E.
15.92 : 18.8 ::	37,000 :	43,693 "	" *e*F.
16.97 : 19.7 ::	27,000 :	31,344 "	" *f*G.
17.63 : 20.27 ::	17,000 :	19,546 "	" *g*H.

Their number, dimensions, cubic contents and weight will be:—

		Feet long.	Inches.	Cub.ft.	lbs.
2	counter-braces	11.5	9×18.5	=26.6	=798
2	do.	13.5	9×12	=20.2	=606
2	do.	16	9× 9	=18	=540
2	do.	17.5	9× 7.5	=16.4	=492
2	do.	19	9× 7	=16.6	=498
2	do.	19.75	9× 6.25	=15.6	=468
2	do.	20.25	9× 5	=12.6	=378
Total counter-braces				126	=3,780

This result shows 24 cubic feet,—equal 720 lbs., equal 16 per cent.—less material required for counter-braces in this form of truss than was found to be necessary in the form, *Fig.* 68, example D.

The Braces.

The oblique thrust of the braces will be:—

8.98 : 13.44 ::	119,000 :	178,102 lbs.	on A*b*.
12.24 : 15.804 ::	103,000 :	132 991 "	" B*c*.
14.4 : 17.53 ::	87,000 :	105,910 "	" C*d*.
15.92 : 18.8 ::	71,000 :	83,844 "	" D*e*.
16.97 : 19.7 ::	55,000 :	63,848 "	" E*f*.
17.63 : 20.27 ::	39,000 :	44,840 "	" F*g*.
17.95 : 20.55 ::	23,000 :	26,331 "	" G*h*.

Their number, dimensions, cubic contents and weight will be—

		Feet long.	Inches.	Cub.ft.	lbs.
4	braces	13.5	7.5×13.5	=38	=1,140
4	"	16	7.5×10.75	=36	=1,080
4	"	17.5	7.5× 9	=32.8	= 984
4	"	19	7.5× 7.25	=28.7	= 861
4	"	19.75	7.5× 6.25	=25.7	= 771
4	"	20.25	7.5× 5.25	=22.1	= 663
4	"	20.5	7.5× 4.5	=19.2	= 576
Total of braces				202.5	=6,075

This result, also, shows 30⅜ cub. ft.=925 lbs., equal 13.2 per cent. less material than was required for the braces in example D.

Vertical Ties.

The vertical iron bolts having to sustain the same weights, as in the other case referred to, their diameters will remain the same, but their lengths will be reduced altogether, about 206 feet, and the consequent diminution in their weight will be 2,250 lbs. or very nearly 25 per cent.

The Chord.

The uniformly distributed weight of the bridge and load acting through the braces, produces the following tensions upon the chord:—

17.95 : 10 ::	15,000 :	8,356 lbs.	of brace G*h*.
17.63 : 10 ::	30,000 :	17,016 "	" " F*g*.
16.97 : 10 ::	45,000 :	26,517 "	" " E*f*.
15.92 : 10 ::	60,000 :	37,688 "	" " D*e*.
14.40 : 10 ::	75,000 :	52,083 "	" " C*d*.
12.24 : 10 ::	90,000 :	73,531 "	" " B*c*.
8.98 : 10 ::	105,000 :	116,926 "	" " A*b*.
Total		332,117 "	

To which add the horizontal effect of 15,000 lbs. at the middle of the truss for the maximum horizontal strain at that point—

18 : 75 :: 7,500 : 31,250 lbs.

Effect of uniform load	332,117 "	
Maximum horizontal strain,	363,367 "	Example E
Do. do.	265,625 "	" D
Difference	98,742 "	=37½ per ct.

To compensate for this increased horizontal strain 98.75 square inches, or 21×4.7 inches, of available section must be added to this chord. On account of a splice it will be necessary to increase this section to 28×4.7=132 square inches of section. This will add 31 per cent. to the section; 146 cubic feet to the solid contents, and 4,380 lbs. to the weight of the chord.

The Arched Top.

The section of the arched top, at 875 lbs. per square inch, must be increased 28×4 inches=112 square inches which is equal to 36 per cent. of the original section in example D; 124.5 cubic feet and 3,735 lbs.

This truss requires, then, an increment in the weight of the top and bottom chords of 8,115 lbs.

And a decrement in the weight of the braces and counter-braces of	1,645 "
Difference in timber against this truss	6,470 lbs.
from which take difference of vertical ties	2,250 "
Total difference in weight	4,220 lbs.

Of the Horizontal Strains.

The horizontal strain at any given point of the chord may be determined in the following manner:

Applying a weight of 15,000 lbs. at the middle of the truss, the horizontal strain upon the whole length of the chord is found to be 31,250 lbs.

Applying the same weight successively at each of the vertical ties is found to produce the following strains upon the chord:

18.	: 75 ::	7,500 :	31,250 lbs.
17.95	: 70 ::	8,000 :	31,198 "
17.63	: 60 ::	9,000 :	30,630 "
16.97	: 50 ::	10,000 :	29,464 "
15.92	: 40 ::	11,000 :	27,638 "
14.40	: 30 ::	12,000 :	25,000 "
12.24	: 20 ::	13,000 :	21,242 "
8.98	: 10 ::	14,000 :	15,590 "

Taking the tension produced at any given point, by the uniform weight of the load and structure, and adding to it the tension caused by the application of the 15,000 lbs. at that point, the result will be the maximum horizontal strain upon that point of the chord.

The horizontal thrust of brace A*b* was	116,926 lbs.
To which add effect of 15,000 lbs. at *b*	15,590 "
Max. horizontal strain betw'n A and B,	132,516 lbs.

Horizontal thrust of brace Bc	73,531 lbs.
Add thrust of brace Ab	116,926 "
Do. effect of 15,000 lbs. at e	21,242 "
Max. horizontal strain betwn' B and C,	211,699 lbs.
Horizontal thrust of brace Cd	52,083 lbs.
Thrusts of Ab and Bc	190,457 "
Effect of 15,000 lbs. at d	25,000 "
Max. horizontal strain betw'n C and D.	267,540 lbs.
Horizontal thrust of brace De	37,688 lbs.
Thrust of Ab, Bc and Cd	242,540 "
Effect of 15,000 lbs. at e	27,638 "
Max. horizontal strain betw'n D and E.	307,866 lbs.
Horizontal thrust of brace Ef	26,517 lbs.
Thrust of braces Ab, Bc, Cd and De	280,228 "
Effect of 15,000 lbs. at f	29,464 "
Max. horizontal strain betw'n E and F.	336,209 "
Horizontal thrust of brace Fg	17,016 lbs.
Thrust of braces Ab to Ef	306,745 "
Effect of 15,000 lbs. at g	30,630 "
Max. horizontal strain betw'n F and G.	354,391 lbs.
Horizontal thrust of brace Gh	8,356 lbs.
Thrust of braces Ab to Fg	323,761 "
Effect of 15,000 lbs. at h	31,198 "
Max. horizontal strain betw'n G and H.	363,315 lbs.
Horizontal thrust of braces Ab to Gh	332,117 lbs.
Effect of 15,000 lbs. at middle	31,250 "
Max. horizontal strain betw'n G and K.	363,367 lbs.

The 112,500 lbs. uniformly distributed over each half truss may be regarded as being concentrated at the centre of gravity of the truss at one fourth the span from the middle. In such a case the weight would act upon the middle point with a vertical force equal to one-half or 56,250 lbs., and upon the abutment with a vertical force of 112,500 lbs.

Add half the variable weight of 15,000 lbs. at the middle to the whole 15,000 lbs. at the abutment and the maximum vertical pressures at other points will be—

56,250+ 7,500= 63,750 lbs. at middle,
112,500+15,000=127,500 " " abutments.

But each half span acts alike at the middle and the total vertical pressure at that point becomes 127,500 lbs. It will also be the same for all intermediate points (§ 28, 75, 76).

§ 95. The strength of a solid beam depends upon the power of the fibres to resist tension and compression; and the strain upon these fibres is greater or less in proportion as the *square of the depth* of the beam is greater or less, (§ 24).

When the depth of the beam is not varied, the strain upon the fibres is greater or less as the weight is nearer the middle, or farther from it; and the load a beam can support, when applied at different points, is *inversely as the products of the segments* (§ 27).

To combine these two laws into one rule, suppose the depth of a beam in the middle to be 18 feet, the depth of this truss. Then $18^2=324$ will represent its strength when compared with that of another beam of the same length.

For instance, if that other beam be 9 feet deep its relative strength will be $9^2=81$.

The ratio of the strength of one beam to that of the other will be as $9^2 : 18^2$, or as $18^2 : 9^2$, or 81 : 324, or 324 : 81, or $\frac{18^2}{9^2}=\frac{324}{81}=4$, or $\frac{9^2}{18^2}=\frac{81}{324}=\frac{1}{4}$.

Suppose the length of the beams to be 150 ft. Then $75\times75=5,625$,—equal the rectangle of the segments, and equal the square of half the length of the beam when the segments are alike,—represents the strain to which the fibres of the beam are subjected at the middle of the beam when any weight whatever is placed at that point.

If that weight be transferred to a point of the beam 5 feet from the middle, the relative strain upon the fibres at this point will be as the rectangle of the segments into which the beam is divided by this point, that is, $70\times80=5,600$.

It the weight be removed to a point 15 feet from the middle $60\times90=5,400$ will be the relative strain.

Then the horizontal effect of any weight when applied at the middle, is to the same applied at 15 feet from the middle, as 75^2 is to 60×90; that is, as 5,625 : 5,400, or $\frac{5,400}{5,625}$, and reciprocally as

$$\frac{75^2}{60\times90}=\frac{5,625}{5,400}.$$

But the load the beam can support is *inversely* as the rectangle of the segments; that is, the weight that the beam can sustain increases as the rectangle diminishes, therefore 5,400 : 5,625 is the ratio of increase of the weight at 15 feet, and the ratio of weight is reciprocal to the ratio of strain.

Now if a given weight, applied at the middle of a beam, 18 feet deep and 150 feet long, will produce a certain tension of the fibres of that beam, the same weight will produce the same tension of the fibres of the beam of the same length and 9 ft. deep, if applied at a point 64.95 feet from the middle; for

$18^2 : 9^2 :: 75^2 : 139.95\times10.05$; or,
$324 : 81 :: 5,625 : 1,406.25$.

§ 96. A solid beam, then, which at every point of its length, has the square of its depth, of the same proportion to the rectangle of the segments of the beam, is of uniform strength, and will support a certain weight at any point of the beam wherever it may be applied; and, reciprocally, the strain upon its fibres will be the same wherever the same weight shall be applied.

The depths of the truss, in example E (*Fig.*69), were taken in conformity to this law of a solid beam. But the application of a given weight at different points, does not produce a uniform tension upon the chord, and, in this case at least, no very clear analogy exists between the open and the solid beam.

§ 97. In example E allusion was made to the importance of giving the same relative height and width to all the panels of a truss in order to give parallelism to the braces. When the top and bottom chords are parallel, this arrangement easily and naturally follows; but when the top of the truss is a curve and the bottom straight, the exact heights and widths of the panels will not be so readily determined, without an accurate geometrical drawing or an arithmetical computation.

§ 98. If an arc of a circle be adopted for the outline of the top of a truss, and a straight line for that of the bottom of the truss, the heights of the panels, from the middle towards the ends of the truss, will diminish as the ordinates, taken at right angles to the diameter of that curve, will diminish.

In the circle every ordinate—or straight line drawn from the diameter to the curve at right angles to the diameter,—is a mean proportional to the abscissas (segments) of the diameter. In other words, the *square of the ordinate* is equal to the *rectangle of the abscissas.*

Putting a to represent the length of the radius, or half diameter of any given circle, of which the arc is a portion; x any horizontal distance from the centre of the circle to the foot of an ordinate, and y the length of the ordinate, or perpendicular distance from a point in the diameter to the arc, $y^2=(a+x)\times(a-x)$ will express the relations just stated; that is, the square of any ordinate, represented by y is equal to the product of the radius (a) plus the distance (x), from the centre of the circle to the foot of the ordinate, into radius minus the distance (x).

But $(a+x)\times(a-x)$ is also equal to a^2-x^2, therefore $y^2=a^2-x^2$ which is called an *equation of the circle*, and means that the *square of the ordinate* is equal to the *difference* between the *square of the radius* and the *square of the distance* from the centre to the ordinate.

§ 99. The *equation of the ellipse* is $y^2=\frac{b^2}{a^2}(a^2-x^2)$, where a represents half the longest diameter, or transverse axis, and b half the shortest diameter, or conjugate axis, x represents any distance from the centre of the ellipse, along the transverse axis to the foot of an ordinate, and y the length of the ordinate. The equation simply means that the *square of the ordinate* (y^2) is equal to *the rectangle of the abscissas* ($[a+x]\times[a-x]=a^2-x^2$) *multiplied by the ratio of the squares of the two semi-diameters* ($a^2 : b^2=\frac{b^2}{a^2}$. The equation is susceptible of being changed to the more convenient form $y^2=b^2-\frac{b^2x^2}{a^2}$, which means: Multiply the square of half the shortest diameter (b^2) into the square of the distance (x^2), from the centre to the ordinate; divide the product by the square of half the longest diameter (a^2); subtract the quotient from the square of half the shortest diameter, and the remainder will be the square of the ordinate (y^2). From this last result extract the square root for the length of the ordinate (y) sought.

This rule is applied in proportioning the panels of the truss in the next example.

(To be continued.)

Hannibal and St. Joseph Railroad.

This road appears to be doing well, as will be seen by the annexed extract from a letter from the office at Boston:

The gross receipts of the Hannibal and St. Joseph Road, since its opening on the 22d February last to the 15th of May, amount to $155,-248 15.

Although a through train was run on the 22d February, the road could not be considered fairly open for business until some time after the 1st of March. And during the whole month of March and the first part of April we had to contend with a flood through the whole extent of the road, which severely washed the banks of the cuts, and of course unsettled an entirely new track, and materially lessened our ability to do the business presented to us.

The track is now in first-rate order, and the trains making exact time. We are not yet sufficiently provided with locomotives and cars, but this want is in the way of being very shortly supplied, and the prospects of a remunerative business are highly satisfactory.

Cincinnati Stock Sales.

BY KIRK & CHEEVER.

For the week ending May 30, 1859.

BONDS.		Per cent.	
Little Miami, 1st Mort.	6s	83	and int.
Covington and Lexington, 2d Mortgage	6s	80	
Do. do. Income	10s	10	fet.
Cinc., Ham. and Dayton, 2d Mortgage	7s	85	
Indianap. & Cincinnati, do. do.	7s	85	
STOCKS.			
Cincinnati, Hamilton & Dayton		60	
Columbus and Xenia		88	
Indianapolis & Cincinnati		52	
Little Miami		90	

American Railroad Journal.

Saturday, June 4, 1859.

Railroad Reports.

It is a very difficult thing to get a railroad company to disclose what the public are often most interested to know. Take for instance the Michigan Southern railroad. The main line of this road is 242 miles long; the branches 283 miles:—making a total of 525 miles. It strikes us that a stock and bondholder has as much interest in knowing the cost, earnings and expenses of these branches as of the whole road. Upon all these subjects the late report of the President of this company is silent—except in reference to the cost of the Toledo and Detroit branch. It may be that the branches are run at a heavy loss. If so, ought not the stockholders to be informed of it? An exact knowledge of these facts would point out the way in which to get rid of an incubus that is eating up the earnings of the only valuable portion of the road.

Why is the information called for not furnished? We take it that the managers well know that it is as important to be stated as any communicated. We presume that separate accounts are kept of the operations of each branch. What then is the motive for concealment? Every one must judge for himself. It is clear, however, that the managers have a real or fancied interest not in harmony with the owners of the road. They keep back important information that should be laid before them. Why should the former be allowed to possess information, gained by virtue of their positions, not given outside parties having equal, or greater, interests? Is it because they wish to act upon such information in speculating in the stock or bonds of the company; or to preserve their places; or to divest themselves of large pecuniary interests in the road, from a knowledge possessed by themselves alone as to the real condition of its affairs?

From reading the late report of the Company one would hardly know whether it had Treasurer, Secretary or Superintendent. Nothing is heard directly from either of these gentlemen, if there be such in the service of the company. There must be such, as the chief executive is too feeble a person to discharge all their duties. There are a great many things these gentlemen should have told us. The Treasurer should have given us a regular balance sheet. Think of a railroad report of a company owning 525 miles, costing some $20,000,000, without a balance sheet! The Superintendent should have told us as to the condition of the road and machinery, and tried to have given us some idea as the prospects for the future. If it should cost 80 per cent. of earnings to run the road for the year to come, it would create no surprise. The President would feel entirely exculpated in telling us that he has done the best he could. He takes very good care in the meantime not to have any uncomfortable record or precedent outstanding against him. He has told nothing, nor promised anything, so that nothing that can happen will compromise him. He stands equally strong without one qualification for his place, as with a thousand. He is in the position of the *non me recordor* witness. Whether more positive and outspoken men can be got into our railroads, remains to be seen. The feeling is that if you displace one person, the probability is that you may get one *less* qualified for the place made vacant. One thing, however, is clear: the first step to reform is an intelligent idea of the condition of our roads and the manner in which those having them in charge, are doing their duty.

Boston, Concord and Montreal Railroad.

The annual meeting of this company was recently held at Concord, at which the report for the year ending March 31st, was presented.

The capital account was stated as follows:

	Dr.
To cost of road	$2,580,134
" " " equipment	283,450
" " " material including wood land	48,249
" sinking fund	26,500
" assets of various kinds	77,556
	$3,015,880
	Cr.
By stock (old)	$416,600
" " preferred	800,000
" " new	540,400
" " assessments	1,962
" " dividends	25,816
" " scrip	15,222
" mortgage bonds, 6 per cent.	200,000
" " " 7 " "	300,000
" " " 6 " "	150,000
" " " 7 " "	200,000
" sinking fund 6 " "	200,000
" bills payable	47,100
" other items	118,780
	$3,015,880

The total receipts for the year were:—

From passengers	$64,238
" freight	151,314
" mails, etc.	12,168
	$227,720
Operating expenses	141,382
Net earnings	$86 338

Some two years since this road was placed in the hands of trustees under an assignment made to protect parties who were guarantees of the company's indebtedness, amounting to some $250,000. At a meeting of the stockholders held on the 3rd of April, 1857, a committee was appointed, charged with the task of settling all the company's indebtedness and of restoring the road to the stockholders. At the late meeting of the stockholders the committee reported that the floating debt of the company (with the exception of $49,100) had been paid by the proceeds of sale of bonds). The balance due is payable in one, two and three years, in bonds at par, or in cash, at the rate of 75 cents on the dollar.

The judgment recently recovered in favor of W. H. Smith for $64,685, is not included in the amount of floating debt represented as outstanding in the general account, but is a special debt, to be paid out of the net earnings, at the rate of $10,000 annually.

The road is in better condition than at any former period, being relieved from the pressure of a floating debt. Its first mortgage, however, of $500,000, falls due Aug. 15, 1860. To retire these, the company have on hand an equal amount of bonds of another issue, which, on payment of the bonds falling due the next year, become a first mortgage on the road.

During the past year the company leased the White Mountain Railroad for a period of 5 years, agreeing to pay therefor a rent of $10,000 annually.

By the adjustment of the floating debt, the road has again vested in the hands of the stockholders.

Hydraulic Cements.

Cements have been chemically defined as substances capable of taking a liquid form, and of being in that state applied between the surfaces of two bodies, so as to unite them by solidifying. There are two classes of cements—those which are applied through the agency of liquids, as oils, water, etc., and those which combine separate bodies by fusion with heat.

Hydraulic Cements, of which the *Rosendale* is the most approved kind, is made from certain rare descriptions of limestone, containing from 8 to 25 per cent. of foreign matter, such as alumina, magnesia, selicia, etc., which, when calcined and pulverized, possess the property of hardening under water in a few days. Though calcined, it does not slake when moistened; and when pulverized, will absorb water without swelling up or heating.

The *Rosendale Hydraulic Cement*, which, in this country, has superseded the Roman cement, at about one-fourth its cost, is being used in large quantities in the construction of public buildings, fortifications, etc. The Croton Water Works, in this city, the Nassau Water Works, in Brooklyn, and the Water Works and Capitol Extension in Washington, were principally supplied with this cement. The foundations of many splendid warehouses, dug far below water mark, are indebted to this adamantine bulwark for perpetual protection against the incursion of water. As an agent in the construction of bridges, dams, conduits, reservoirs, etc., it is indispensable.

The *Newark and Rosendale Hydraulic Cement Company* was organized, and factories built, in Newark, N. J., in 1848. The works at that place having been twice destroyed by fire, the company resolved, in 1853, to re-build them in the immediate vicinity of their quarries, which are situated in Rosendale, Ulster Co., N. Y. This property was formerly owned by Hon. Hugh White, from whom it was purchased by this company in 1848; since which time, extensive improvements have been made in the mills and quarries, in sinking shafts and tunneling the mountain, thus affording greater facilities in working, while a better quality of stone was obtained. The district of country in which these quarries are situated, lies between the Highland and the Catskill range. The works comprise a number of large buildings, including shops, storehouses, etc., besides two water mills of 25 horse power each, and one steam mill, furnished with an 80 horse power engine. About 150 men are constantly employed in the various occupations of quarrying, burning, teaming, coopering, etc. The cooperage belonging to this establishment is probably the most complete in the United States. As an in-

stance of the amount of work performed in one day, it may be mentioned that 600 barrels are begun in the morning from the rough stave, and finished while the cement is being ground, and the barrels filled and headed up by the time the day is ended. The kilns, which are 25 feet high by 9 in diameter, possess the capacity of calcining 50 barrels a day each. They are "perpetual," burning night and day. The fuel used is a small-sized hard coal, of which 2,500 tons a year are consumed. The cement manufactured by this company is the genuine Rosendate, warranted pure and free from quick lime. The present officers of the company are: JOHN H. STEPHENS, President; J. M. HARRISON, Vice President; H. WILDE, Secretary and Treasurer. The offices of the company are at Newark, N. J., and 90 Wall street, New York.

Mississippi Central Railroad.

This road, which is the last unfinished link connecting New Orleans with the railroad system of the country, is making a progress so rapid as to leave little doubt of its completion in the month of October, which will be in season for the fall business. The graduation is nearly, if not quite, complete; the iron either on the ground or at New Orleans, and an efficient contractor, with an ample force, is rapidly placing it on the track.

The road will possess some extraordinary advantages for business, and will, at the same time, confer a great blessing on the traveling public. From its northern terminus two routes are opened —one running in a direct line to Washington, Baltimore, Phliadelphia and New York; and the other to Chicago, with branches to St. Louis, Louisville and Cincinnati. It will sustain to the travel of the Valley of the Mississippi the relations that that river does to its commerce, while it must be the route of travel to New Orleans for the east and north, as well as west. It will be a great day when the traveler can be released from the frightful perils of the Mississippi River, and the wholesale slaughter of valuable lives which every few months take place upon it. When the road shall be opened from Cairo to New Orleans, the time by rail will be only one-sixth of that now consumed by the river trip, and with greatly reduced expense.

Northern (N. J.) Railroad.

This road, extending from Jersey City to Piermont, was opened on the 26th ult. by an excursion, in which some two thousand persons joined. An entertainment was provided at the Piermont depot, and speeches were made by Gen. Nye, Ex-Superintendent Talmadge, Gen. Wright, Dr. English and others. The contractors of the road were Messrs. B. F. Seymour, formerly of the Hecla Works, Oneida co., and M. Towers, of Waterville in that county.

Great Western (Ill.) Railroad.

Under the provisions of the new charter of the Great Western Railroad Company, the stockholders met at Springfield, Ill., recently, for the purpose of organization. L. Tilton, Geo. Griswold, Jr., F. T. Freelinghuysen, and E. T. H. Gibson were chosen directors in addition to the five already appointed by the provisions of the charter, which latter are the corporators. The new directory appointed the following officers: L. Tilton, President; W. B. Corneau, Secretary; J. N. A. Grisworld, Treasurer. Executive Committee—L. Tilton, James L. Lamb, and James Dunlap.

Security Market.

The prices for the week of the leading securities in the market have been as follows:

	May 26.	27.	28.	30.	31.	J'e 1.
Missouri 6s.....	83¼	83¼	84	84¼	84	84
Del. and Hud...	94¼	94¼	94¼	94¼	93	94¼
Pacific Mail....	75	75	74	74	71	71
N. Y. Central...	72¼	73	74	72¼	73	72¼
Hudson River...	..	31¼	31¼	..	..	31
Panama 119	119	..	119	118¼	..	
Harlem Pref....	..	..	37	37	36¼	36¼
Reading	42¼	44¼	44¼	43	43¼	42¼
Michigan S'th'n.	9¼	..	..	9¼	9¼	9¼
" Pref. .	32¼	32	32¼	32	31¼	31¼
" C'nt'l..	53¼	43¼	42¼	42	41¼	41¼
Ill. Cent'l shares.	53¼	59¼	57	56¼	55¼	56
" 7s...	79	80	80	79	..	79¼
Gal. and Chicago.	64¼	64¼	60¼	64	63¼	63½
Clev. and Toledo.	28	28¼	28	27	26¼	27
Chi. and Rock I..	61¼	62	60¼	59¼	57¼	57
Tennessee 6s ...	90¼	..	90¼	90¼	90	90¼
Virginia 6s.....	95¼	96¼	97	96¼	96	96

Northern Railroad Company.

The annual meeting of the stockholders of the Northern Railroad was held at Concord, N. H., and the old Board of Directors unanimously re-elected for the ensuing year. They are as follows:—Onslow Stearns, John A. Burnham, George W. Nesmith, Uriel Crocker, Josiah Minot, Joseph W. Clark, Geo. A. Kettell.

Illinois Central Railroad.

The annexed circular gives the details of the new financial scheme of the Illinois Central Railroad Company:

The Directors of the Illinois Central Railroad Company request the shareholders to consider the following plan, which has been suggested for the purpose of placing at the immediate disposal of the Company that portion of the annual revenue derived from the sale of its lands. New expenditures are not contemplated; it is very desirable, however, to take early steps to provide for the debt on free lands, maturing Sept. 1, 1860, and obviate the inconvenience attending the terms of the mortgages, by which the current receipts from the sales of land are absorbed in the redemption of the principal.

Although the first mortgage of $17,000,000 is nominally due in 1875, it is substantially undergoing the process of daily liquidation, because the moneys received, as fast as they are received, must be applied to the payment of the bonds. Thus far, $1,110,000 have been paid.

The funded debt is now $18,899,000, the annual interest upon which is $1,282,510. During the past three years the net earnings and collections from the lands have been $3,567,296 12, of which $1,050,263 09 has been applied to the extinction of the funded debt.

It is proposed to set apart a fund for the payment of interest, by placing in trust the $2,657,087 of Freeland Notes held by the Company, which notes, with the proceeds of 149,186 acres of land, valued at $4,464,240 03. This trust fund will, it is believed, afford an ample provision for interest until dividends are earned upon the capital stock.

The plan suggested is the voluntary payment by the shareholders of the unassessed $40 upon their shares, and upon receipt thereof, the Company will issue full paid certificates of $100, with interest warrants attached for $4 per annum, which will be equivalent to 10 per cent. upon the $40 contributed—the amount is to be applied, first to the wants of the Company for the current year, then to the payment of the Freeland Bonds, and to the purchase of the Construction Bonds, to be held for the wants of the Land Department. The extinction of the lien upon the Freelands will release the property for the purposes of the trust, and render available for the purposes of interest all the collections in the Land Department. It will be seen that no new lien is placed upon the road, and the obligation to pay interest terminates when dividends are earned.

The means of the Company to pay four per cent. to the shareholders who may choose to pay in full are apparent, even if all pay. $40 per share on 175,000 shares is $7,000,000. The liability for interest is increased $210,000 per annum. The cash receipts in the Land Department in each of the three last years have been sufficient to cover the increased interest; $1,050,263 09 is the aggregate for the three years, applied to the purchase and cancellation of bonds.

The London agents of the Company, Messrs. Robt. Benson & Co., have issued a circular to the stockholders, calling upon them to conform to this scheme, and pay up $40 in each share.

Norristown and Allentown Railroad.

We learn from the Montgomery *Ledger* that the survey of the Swamp Creek route of the Norristown and Allentown Railroad, by the corps of engineers under Mr. Mifflin, was completed last week. The line leaves Wilson's Survey, about a mile below Zeiglersville, Montgomery Co., and runs up Swamp Creek to near Schultzville, Berks Co., where it strikes the west branch of the Perkiomen Creek. It then follows that stream some eight or nine miles, and crosses the range of mountains that divides the waters of the Schuylkill from those of the Lehigh at a gap near Trexler's Iron Works, and intersects the East Pennsylvania Railroad at Mertztown. The line is a fraction over twenty-six miles long, from the place it leaves Wilson's Survey to Mertztown, or about forty-one miles from Mertztown.

The cost of the road by this route would be small compared with the Perkiomen route. Mr. Mifflin estimates the saving to be half a million of dollars, besides the expense of the tunnel that would be necessary by the other route, which would be about three hundred and fifty thousand more, or in all about eight hundred and fifty thousand dollars. There is no grade on the Swamp Creek route of more than sixty feet per mile, and less curvature than railroads generally have.

The probabilities are now, we understand, that if this railroad is built, a connection will be made with the Philadelphia and Reading Railroad, at or near the junction of the Perkiomen Creek and the river Schuylkill.

Cheraw and Coalfields Railroad.

We learn from the Cheraw *Gazette* that the preliminary survey of this road has been commenced under the general direction of S. S. Solomons, Esq., Engineer and General Superintendent of the Northeast Railroad.

Sheboygan and Mississippi Railroad.

The Sheboygan *Times* states that this road is opened, and two trains running daily to Decca, 10 miles from Sheboygan; and that the track is also laid two miles beyond Decca, making 12 miles in all; and that the road will shortly be opened to Plymouth, 15 miles. The time will then be three hours between Sheboygan and Fond du Lac.

Important Railroad Decision.

James H. Hotchkin, of Prattsburg, Steuben Co., bought a ticket on the Erie Railroad at New York for Rochester. It was marked "Good for six days only." After the expiration of six days, Mr. H. presented the ticket between Bath and Rochester; it was refused, and he was ejected from the cars. He commenced a suit, which was recently tried before Referees designated by the Supreme Court, and they have awarded the plaintiff $150 damages.

Finances of Rhode Island.

The general treasurer of Rhode Island reports that the revenue of the State for the year ending April 30, was $178,947, while the expenditures were $179,729, showing a deficiency of $5,782. There was a deficiency the year previous of $10,648.

Railroad Earnings.

Traffic of the Great Western (Ca.) Railroad, for the week ending May 21, 1859:

Passengers	$22,449 62
Freight and live stock	9,564 41
Mails and sundries	1,466 85
Total	$33,480 88
Corresponding week of last year	$37,471 58

The receipts of the Grand Trunk Railway of Canada for the week ending May 14, were | $42,486 49
Week ending May 15, 1858 | 46,137 21
Decrease | $3,650 71
Total traffic from July 1st | $1,996,572 67
Same period last year | 2,083,618 72
Decrease | $87,046 05

The earnings of the Sandusky, Mansfield and Newark Railroad Company, for April, were:—

1859	$17,156 60
1858	16,702 23
Increase	$454 37

The business of the Watertown and Rome railroad, for April, was as follows:—

EARNINGS FROM—	1858.	1859.
Passengers	$11,942 50	$11,350 66
Freight	21,398 25	17,395 02
Miscellaneous	2,702 60	1,781 68
Total	$36,043 36	$30,537 36
EXPENSES.		
Maintaining road	$7,706 22	$3,435 82
Repairs to machinery	2,515 92	1,652 91
Operating road	11,123 91	8,537 17
Overcharges refunded	3 58	156 05
Total	$21,349 73	$14,982 65
Net	$14,693 63	$15,554 31

Regulation and Economy of Steam Engines.

With all the improvements which have been introduced in steam machinery, very few engines run at a uniform speed when there are very great variations in the amount of machinery to be driven. The ingenious contrivance called a governor, is intended to make the machine self-regulating; but, whether acting through the agency of the old throttle valve, or changing the point at which the admission of steam is cut off, it is usually only an assistant, a large part of the regulation being done by the hand of the engineer applied to another valve, and this involves a loss of power by weakening the steam. The advantages of regulating by the cut-off, as it is called, are pretty well understood by all who have intelligently investigated the subject. The steam is admitted at full pressure during the early part of each stroke of the piston, and allowed to act by expansion alone during the last part, the part of the stroke during which the steam is admitted being variable, the steam following further when the speed slackens, and being "cut off" earlier when it is too great. This system allows the steam to be used with its full effect, instead of with a fraction, as in the ordinary system, and the governor can be caused to effect the desired changes with some degree of perfection; but there are faults which the governor alone has not yet been successful in rectifying, and engines thus regulated often persist in going slow when the steam is low, and much faster when it is high, to the great damage of the machinery.

Messrs. Todd & Rafferty, the well-known engine builders at Paterson, N. J., have lately applied to stationary engines a combination of a cam motion and link motion, whereby the regulation is all effected by changing the point of "cut-off," and also whereby complete provision is made for modifying, by a touch of the hand, the regulation produced by the governor.

There is a species of valve motion introduced very successfully on locomotives within a few years, known as Uhry & Luttgen's Improvement. The device in question is substantially this, but still further improved, and applied to stationary engines. Only a single slide valve is employed, as in ordinary engines. The governor unaidedly makes all the adjustment necessary to compensate for sudden changes in the resistance, thus keeping the speed of the machine very *nearly* uniform; while, if the motion thus regulated be found to average rather too slow or too fast, the hand of the engineer applied to a small hand-wheel, adjusts it by means of a screw, to any rate desired. The silk manufactory of Messrs. Fuller Brothers, near the depot at Paterson, is driven by one of these engines, and the complete success of this improvement, in rendering this great agent of civilization perfectly controllable, entitles it to much attention.

Southern Pacific Railroad Company.

At a meeting of the stockholders of the Southern Pacific Railroad Company, held at No. 54 Wall st., pursuant to public notice at 12 o'clock, May 30, 1859, Jonathan Trotter, Esq., was appointed Chairman, and R. M. Stratton, Secretary. The President, Dr. J. Fowlkes, made an able and full exposition of the affairs of the Company, in the form of a report to the Stockholders, which was unanimously accepted and adopted. The following preamble and resolutions were also unanimously adopted:

Whereas, A new policy of the Southern Pacific Railroad Company was adopted and inaugurated at Marshall, Texas, on the 10th day of April, 1859, which policy appears to be eminently calculated to relieve the Company from its embarrassments, and, in fact, is vitally necessary for the continuance of its existence; therefore

Resolved, That this meeting of Stockholders cordially approve the same and warmly recommend to every Stockholder to comply with the requisition either to make the loan of fifty cents a share or pay up all past due instalments, or make a surrender of a portion of his stock in the manner proposed; and

Whereas, A large number of stockholders have, either by paying up all back instalments, by loans of money or by surrenders of stock, shown their desire to protect their own interests, and have thereby secured the protection of their stock; and

Whereas, A large number of stockholders are still delinquent in their payment of instalments, or in their loans to the company, or in their surrenders of stock; and

Whereas, It would be a manifest act of injustice to those stockholders who have entitled themselves to protection to allow such delinquent stockholders to be protected at the expense and cost of such paying stockholders; therefore

Resolved, That it is an act of justice and duty which the Directors of the Company owe to those who assist and contribute to the relief of the Company to exclude all who still refuse to aid the Company, by every fair, legal, and honorable means, from any participation in the advantages to be derived from the adoption of the new policy of the Southern Pacific Railroad Company.

Resolved, That the compromise and settlement of all difficulties and claims, as recently effected by the President of the Company in Texas, are entirely satisfactory to this meeting of stockholders, and that they feel assured that to the energy, perseverance and good judgment of the President of the Company, they are mainly indebted for the accomplishment of the same.

Resolved, That the stockholders will hail with great pleasure the accession of Texan stockholders to their numbers, and that they fully appreciate the importance of building up in the State of Texas a home influence which will be of a conservative and protective character, and which will insure the speedy continuation of the road.

Resolved, That we duly appreciate the liberality of Texas in her legislation for us, and that it is our duty as well as our interest not to disappoint her citizens in what they so much desire, viz: the construction of a great railroad from Vicksburg to El Paso; and

Whereas, By terms of compromise, $50,000 is to be paid in thirty days after dismissal of the State suit; and $50,000 more in ninety days from dismissal of said State suit; and

Whereas, It is very important that the officers of the Company should know positively what the stockholders intend to do as speedily as possible; therefore

Resolved, That it is the opinion of this meeting that all stockholders who do not protect themselves, either by making a loan, surrendering their stock in part, or paying up all back instalments on or before the 10th day of June next, should be precluded from so doing for ever after.

Resolved, That all stockholders whose concurrence may best be consulted by transacting their business in New York, may carry out the details of arrangements necessary for the adoption of the new policy of the Company, may do so by calling on Edwin Post, Agent, No. 54 Wall st., Room No. 6.

Resolved, That the foregoing resolutions be published, and circulars be sent, as far as possible, to stockholders, showing the necessity of their prompt action by the 10th of June next.

New York, May 30, 1859.

Jonathan Trotter, Chairman.
R. M. Stratton, Secretary.

Funded Debt of the City of St. Louis.

The bonded debt of this city on the ninth day of May, 1859, amounted to five millions three hundred and twenty-one thousand two hundred and ninety-six dollars, and was created for the following purpose, viz.:

For general municipal purposes	$520,400
On account of waterworks	518,896
To improve harbor	259,000
To improve wharf	167,000
To construct public sewers	426,000
To renew bonds and pay past indebtedness	719,500
To purchase real estate	437,000
To construct district sewers	224,500
Stock in railroads	1,790,000
Old limit improvements	259,000
	$5,321,296

The floating debt at the same date amounted to $46,437. Of the outstanding bonds, $141,896 will fall due the present year.

FOR SALE.

2,250 TONS English Rails, (afloat), 54 lbs. to the lineal yard, Erie pattern, Bars 24 feet long. Terms, Cash.

New York, June 1, 1859. 4t23 GEO. T. M. DAVIS, 47 Exchange Place.

TRANSIT FOR SALE.

A TRANSIT, nearly new and in perfect order. Price $100. Inquire of—

1t23 J. T. HOBBY, 156 Water st., N. Y.

Office of the Illinois Central R. R. Co., New York, May 28, 1859.

THIS COMPANY is now prepared to pay ... fund upon its capital stock, as ... to receive payment in dressed to the shareholders or ... set forth in the circular ad

The Freeland Bonds ar... the 5th of March last.

pany, except the Cons... all other obligations of the Com-

ceived at par, and ... uction Bonds, due in 1875, will be re-

of $40 per sh... accrued interest in payment of the balance

Certif... now unpaid.

Com... ates of full-paid shares will be issued, upon which the ...any will pay an interest dividend of TWO DOLLARS per share semi-annually, upon the conditions recited in the circular.

By order of the Board.

J. N. PERKINS, Treasurer.

RAILROAD CHAIRS, SPIKES, ETC.

SOLID, and FOLDED LIP, **Railroad CHAIRS, SPIKES, NAILS, STEEL**, etc., manufactured at TROY by the "**ALBANY IRON WORKS,**" and sold for cash or approved paper on favorable terms by

GEO. T. M. DAVIS, Agent,

NEW YORK, June 1, 1859. **47 Exchange Place.**

CEMENT, PLASTER, ETC.

THE HUDSON RIVER CEMENT CO.

HAVE commenced manufacturing for the season, and can now furnish a very superior article of fresh **Rosendale Cement, Calcined Plaster, Farmers' Plaster** and **Marble Dust.** Address

HUDSON RIVER CEMENT COMPANY,
12 **Jersey City, N. J.**

Rosendale Hydraulic Cement.

THE NEWARK AND ROSENDALE CEMENT COMPANY are now receiving **fresh from the Mills** their approved ROSENDALE CEMENT, warranted **pure** and **free from quick lime,** and which has given such **general satisfaction** in the various government and other public works in which it has been used. Purchasers and shippers should be careful to get the **genuine ROSENDALE CEMENT**, branded "NEWARK AND ROSENDALE," "H. WILDE." This Cement does not swell and burst the hoops when stored in warm climates. It is packed in tight **kiln dried barrels,** and is specially adapted for safe shipping on long voyages. Terms reasonable, which may be known by addressing,

JOHN H. STEPHENS, President, Newark, N. J., or
HENRY WILDE, Secretary, 90 Wall st., N. Y.

DELAFIELD & BAXTER'S,

Late OGDEN & DELAFIELD,

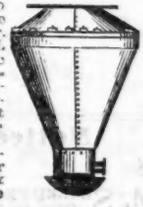
ROSENDALE CEMENT

WE are prepared to enter into arrangements for supplying our CEMENT for public works, or other purposes. We **warrant it equal in every respect** to any manufactured in this country. It attains a great degree of hardness, sets immediately under water, and is a **superior article** for masonry coming in contact with water, or requiring great strength.

For sale in tight barrels, well paperred, on application at their office, by **DELAFIELD & BAXTER, 104** Wall st.

The above CEMENT is used in most of the fortifications building by government. 45

RADLEY & HUNTER'S IMPROVED SPARK ARRESTER.



RADLEY & HUNTER'S CELEBRATED NEW INVENTION is now offered to the public as a **Perfect Spark Arrester**, which possesses the advantage over ALL OTHERS of being of the **most simple construction,** and much more **durable** than any ever used. The manufacturer invites an examination of this Arrester by the Railroad public, confident that it will meet with **universal approbation.**

The undersigned hereby gives public notice that he is the **sole manufacturer** of the above article under the Radley & Hunter Patent, of whom alone they can be purchased in the United States.

EDWIN R. BENNET,
Office 82 Dunne St., New York.

Central Park Improvement Fund Stock.

PROPOSALS for $300,000 CENTRAL PARK IMPROVEMENT FUND STOCK.—Sealed proposals will be received at the Comptroller's office until THURSDAY, June 16, 1859, at 2 o'clock, P. M., when the same will be publicly opened, for the whole or any part of the amount of THREE HUNDRED THOUSAND DOLLARS OF THE CENTRAL PARK IMPROVEMENT FUND STOCK OF THE CITY OF NEW-YORK, authorized by an Act of the State Legislature entitled "An act for the Regulation and Government of the Central Park in the City of New York," passed April 17, 1857, amended April 13, 1859, and by an ordinance of the Common Council, approved by the Mayor, May 18, 1859.

The said Stock will consist of Three Thousand Shares, of One Hundred Dollars each share, bearing interest at the rate of six per cent per annum, payable quarter-yearly, and the principal sum redeemable on the 1st day of August, 1887.

The proposals will state the number of shares desired, and the price per share; and the persons whose proposals are accepted will be required to deposit with the Chamberlain of the city, within three days after the opening of the bids, the whole sum awarded and covered by their bids respectively, including the premium, if any, thereon, and on presenting the receipt of the Chamberlain to the Comptroller, will be entitled to receive a certificate for the par value of the number of shares, bearing interest from the date of such deposit.

Each proposition should be sealed up and indorsed "Proposals for Central Park Improvement Fund Stock," and the proposals, thus sealed and endorsed, put in a second envelope sealed and addressed to "Robert T. Hawe, Comptroller, New York." The right is reserved on the part of the Comptroller to reject any or all of the bids, if considered necessary to protect or promote the interests of the Corporation.

Department of Finance, Comptroller's Office, New-York, May 17, 1859. ROBERT T. HAWE, Comptroller.

Notice to Contractors.

OFFICE OF THE DUBUQUE AND PACIFIC R. R. Co., Dubuque, Iowa, May 7th, 1859.

PROPOSALS WILL BE RECEIVED AT THE OFFICE of the Dubuque & Pacific Railroad in Dubuque, Iowa, for the construction of said road from its western terminus to Sioux City.

The following are approximate estimates of the amount of embankment and excavation

	Embankment. Yards.	Excavation in earth. Yards.	Ex'vation in rock. Yards.
From end of present track, 2 miles beyond Nottingham to Winthrop, 20 miles,	125,000	56,500	700
Next 20 miles, west of Winthrop	140,000	92,000	
From there to Cedar Falls, 25 miles	165,000	105,000	
From Cedar Falls to Fort Dodge 92¼ miles	1,116,000	150,000	6,590
From Ft. Dodge to Sioux City, 130 miles	1,300,000	300,000	

The original estimates were for different gradients from those we now propose to adopt. The above estimates of work to be done are merely approximate, but are believed to be substantially correct. A large portion of the grading between the end of the present track and Cedar Falls, is already done; many of the culverts are put in; and the cross-ties for about forty miles are delivered. Timber will be substituted for masonry. Propositions will be received for road bed and superstructure, without fencing and without buildings, except water tanks; and the company will furnish rolling stock for construction.

The amount of grading, as will be seen by the above estimate, is exceedingly small; the material as a general thing, is black loam soil. Timber is convenient of access in the vicinity of all the principal streams as far west as Fort Dodge; from there to Sioux City it is quite scarce; there is considerable, however, in the little Sioux, and occasional groves and patches scattered over the intermediate country. The Big Sioux and other streams in the vicinity of Sioux City, furnish an abundance of good timber. Bituminous coal of fair quality exists in abundance on the Iowa, Boone, Desmoines and Big Sioux rivers. The Missouri river is navigable for steamboats from Sioux City to Fort Benton, 1,900 miles, as ascertained by actual measurement by several United States officers. The United States appropriated one hundred thousand dollars to open a military road from Fort Benton to Fort Walla Walla, the head of navigation of the Columbia river; and Lieut. Mullan, U. S A., is now at work with a strong force opening that road. When that is done, and the Dubuque & Pacific Railroad finished to Sioux City, this must become the main route to Washington, Oregon, and the Northwestern British Possessions. The region of country near the head waters of the Columbia and Missouri rivers, is one of the most beautiful and desirable in the world, according to the reports of the U. S. officers who made the Pacific Railroad surveys. All who visited that region for a great distance north and south, east and west, again and again, express their delight and agreeable surprise, in finding a country so contrary to all their preconceived notions. It has a fine climate and fertile soil, and is in every respect considered a country capable of sustaining a dense population. Nineteen hundred miles of navigable water through such a country, to say nothing of the great through route to the Pacific, must be a powerful feeder to our road. In view of these facts, the company deem it advisable to commence work at the west end as well as at the east. Payment will be made in construction bonds, drawing seven per cent interest, which are a lien on the road and on the lands granted by Congress; in county bonds, and in such local means as can be raised on the line of the road. The land grant is three thousand eight hundred and forty acres per mile, the same as the Illinois Central; the greater portion of the lands lie between Fort Dodge and Sioux City; all are within fifteen miles of the road. The construction bonds are receivable at par in payment for lands; when land is paid for with these bonds, the mortgage by its own terms ceases to be a lien upon it. Two hundred and thirty thousand four hundred acres of land belonging to the portion of road now completed, will be offered for sale on the 6th of June next, for construction bonds at par, at an average price of about four dollars an acre. The company intend to put the bonds and lands at rates which will induce capitalists, in these times, to undertake the building of the road. We are well aware that no one will undertake a work of this magnitude without strong inducements.

At least forty miles of road must be completed by the first of December next; this can easily be done, as the grading and bridging is far advanced, and the cross-ties are delivered. However, the forty miles to be completed by that time may be in two pieces of twenty miles each, one at each end of the road. Propositions will be received for the building of the whole line, or for portions of twenty, forty or sixty miles. As each twenty miles of road are completed, the company are entitled to sell an additional seventy-six thousand eight hundred acres of the land grant. The building of the west end of this road offers a favorable opportunity for founding a half dozen or more colonies on a large scale.

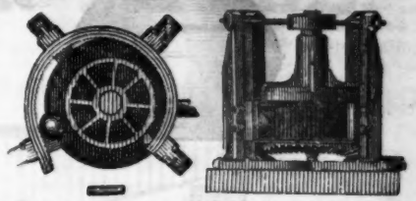
The company own, with but few exceptions, each alternate section (mile square) of land for fifteen miles on each side of the road. Twelve to fifteen stations may be located on the lands of the company; and the lands at the stations, except depot grounds and right of way, will be secured to the contractors. The vicinity of Sioux City is a favorite spot for German emigrants. It is believed that most of the work can be paid for in lands and goods. Considerable work was done at the east end of the road last year, for goods, at lower prices than the same work could formerly be done for money.

Maps and profiles may be seen, and further information had at the office of the company, in Dubuque, Iowa.

Adopted by order of the Board

J. S. WINSLOW,
PLATT SMITH, } Corresponding Com.
F. M. REDMOND,

HENRY BURDEN'S PATENT REVOLVING SHINGLING MACHINE.



THE subscriber having recently purchased the Right of this Machine for the United States, now offers to make transfers of the Right to run said Machine, or sell to those who may be desirous to purchase the Right for one or more of the States.

This Machine is now in successful operation in ten or twelve Iron Works in and about the vicinity of Pittsburg, also at Phœnixville, and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous:

Considerable saving in first cost; saving in power; the entire saving in shingler's, or hammerman's wages, as no attendance whatever is necessary.

It being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required.

The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal, as under the hammer.

The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery.

The bars roll sounder, and are much better finished.

The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated.

For further particulars address the subscriber at TROY, N. Y.

P. A. BURDEN.

Railroad Spikes & Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, EXCLUSIVE OWNER of all **Henry Burden's Patented Machinery for making Spikes,** have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad Fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention. **WM. F. BURDEN,** Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Patent Machine-made Horse Shoes.

THE TROY IRON AND NAIL FACTORY have always on hand a general assortment of Horse Shoes made from **Refined American Iron.**

Four sizes being made, it will be well for those ordering to remember that the size of the Shoe increases as the numbers—No. 1 being the smallest.

WM. F. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

FIRST INTRODUCED JULY, 1849

A. L. ARCHAMBAULT,

MANUFACTURER OF

PORTABLE STEAM HOISTING AND PUMPING ENGINES,

From 3 to 30 horse-power, and

STATIONARY ENGINES, from 3 to 100 horse-power

S. E. cor. Fifteenth and Hamilton Sts.,
PHILADELPHIA.

FREIGHT CARS for SALE.

27 CARS—Have been run about two years,—viz:—
5 long 8-wheel Box Cars, 2 with apartment for conductor
3 " " Cattle Cars.
19 " " Platform Cars.

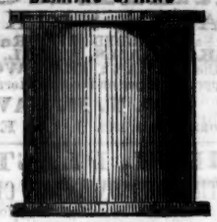
These Cars are made in the best manner, with large axles, safety beams, brakes, lightner boxes, and have been newly painted and will be sold low for cash.

Galt WILLIAMS & PAGE,
44 Water st., Boston.

IMPROVED BEARING SPRING

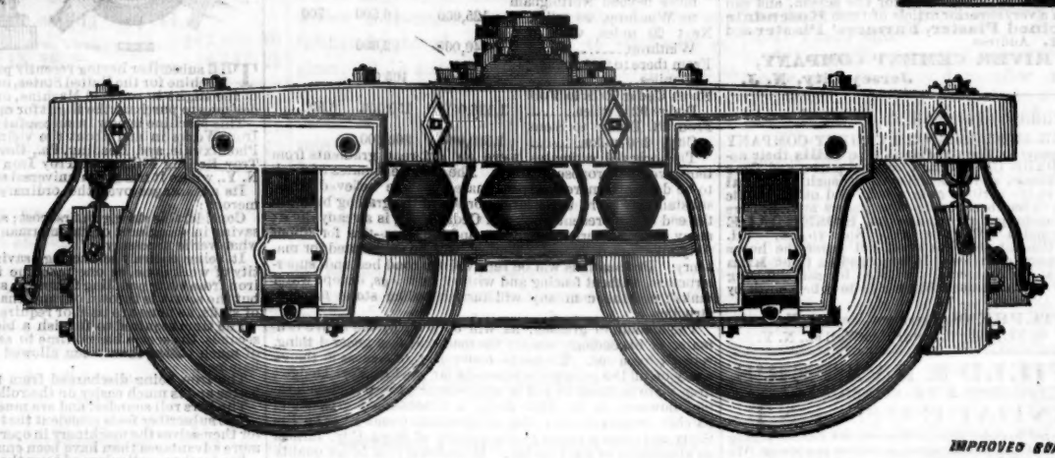
New England Car Spring Co.

BEARING SPRING

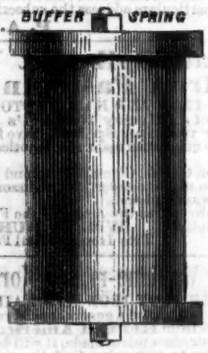


SOLE MANUFACTURERS

OF THE

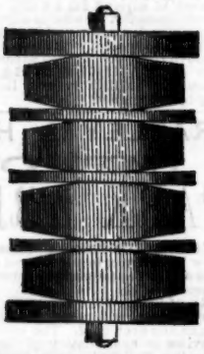


BUFFER SPRING



India Rubber Car Springs.

IMPROVED BUFFER



OFFICE, 61 CHAMBERS STREET,

NEW YORK.

JOURNAL

OF THE

American Geographical and Statistical SOCIETY.

The Fifth Number of this Journal is now ready.

Subscription Price, $3.00 per year, or 25 cents per copy.

Letters relating to the *business* of the JOURNAL are to be addressed to the Publishers

JOHN H. SCHULTZ & CO.,
9 Spruce st.,
NEW YORK.

Swiss Drawing Instruments.

SUPERIOR to all others. Catalogues gratis. Sold only by C. T. AMSLER, 635 Chestnut st., PHILA., Pa.

JAMES C. LANE,

Ex-Chief Engineer of Explorations in South-America, etc.

MECHANICAL AND CONSULTING ENGINEER,
Times Building, 41 Park Row,
Room No. 4, NEW YORK.

PATENTS NEGOTIATED.

DRAWINGS, Specifications, and Models, (metal or wood.) Applications for Patents, and all business whatever connected with Patents attended to with economy and despatch. Application for PATENT, including drawings, specifications and Patent Office fees, $60.

Dubuque & Pacific Railroad Company.

THERE will be an election of seven directors of said Company on Monday the 6th of June, 1859, at the office of the Company in Dubuque.

JAMES M. McKINLAY,
Secretary.

5t29

HUFTY'S

ENGINEERS, ARCHITECTS AND DRAFTSMEN'S

STATIONERY EMPORIUM.

WHATMAN'S TURKEY MILL DRAWING PAPER, Tracing Paper, Plan and Profile, Protractors, Drawing Pins, Faber's, Jackson's, and other makers' Pencils; Field, Level and Memorandum Books of various patterns, Mathematical Instruments, Tape-lines, Mouth Glue, Cross Section paper, Triangles, Label Brushes, Gum Bands, Maiden Gum, Red Tape, Ink, Inkstands and Sand, Water Colors, Pallets, Patent Binders for letters, Portfolios, etc.,

TOGETHER WITH A GENERAL ASSORTMENT OF

Stationery and Blank Books.

All goods packed with care, and forwarded to any part of the United States.

JOSEPH HUFTY,
407 Chestnut st., Philadelphia.

ROLLING MILL FOR SALE.

A MERCHANT IRON AND WIRE ROD ROLLING MILL, situated in the City of Wheeling, Va., with Coal banks in rear of the mill containing an abundance of good bituminous coal.

The cost of the fuel delivered to the furnaces is but two and a-half cents per bushel.

Attached to the mill is a WIRE FACTORY and its appendages. Also a KIRK STEAM HAMMER for Forgeing Car Axles, etc. There is extra shafting and surplus of power for other work if required.

The extraordinary **cheapness** of the **fuel**, and the facilities for obtaining metals, and for shipping, both by water and rail, to all parts, particularly west and south, makes the locality a desirable one for the manufacture of IRON in any or all its branches.

For particulars address either of the subscribers.

P. A. BURDEN, Lansingburg, N. Y.
C. DEWEY, Cadiz, Harrison Co., Ohio,
E. M. NORTON, } Wheeling, Va.
P. C. HILDRETH, }

6t30

Notice to Bridge Builders.

ENGINEER'S OFFICE, C. & S. R. R.
Charleston, May 23, 1859.

SEALED PROPOSALS WILL BE RECEIVED AT THIS Office until 12 M., on Saturday, 18th June next, for the construction of a single-track railroad Bridge across the Savannah River, about thirteen miles above the City of Savannah.

The said Bridge will have (6) six spans of (144) one hundred and forty-four feet each; and a swing bridge (190) one hundred and ninety feet long, (giving two openings of 80 ft each.) The entire length of the Bridge will be about (1070) one thousand and seventy feet.

The superstructure of the Bridge to be of the most substantial character, and on the plan of Howe's Patent Truss.

The piers and abutments to be composed of cast-iron cylinders, (6) six feet in diameter; sunk by Pott's pneumatic process, through an average depth of (20) twenty feet of mud, sand, and gravel, and securely based upon the impenetrable substratum which underlies the bed of the river.

Proposals will be received at the same time for constructing the said Bridge on piers and abutments of brick, resting on piled foundations.

The plans and specifications, bills of timber and iron, may be seen, and all other information obtained, at this office, on and after Monday, 6th June.

EDWARD MANIGAULT,
Chief Engineer, C. & S. R. R.

LOCOMOTIVES.

2 LOCOMOTIVES, about 18 tons, (second hand,) 4 ft. 8½ in. gauge, in excellent order for sale at a bargain.

GEO. T. M. DAVIS,
New York, May 24, 1859. 2m 47 Exchange Place.

HAND CARS.

FOR sale SIX HAND CARS, first class in complete order.

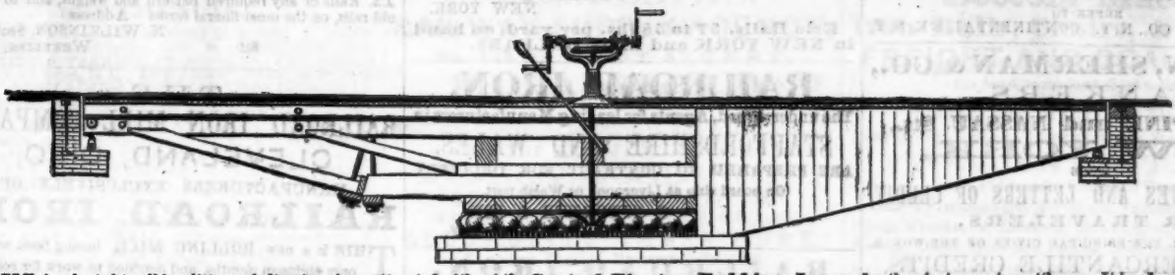
A. BRIDGES & CO.,
64 Courtlandt st.

Patents for Inventions.

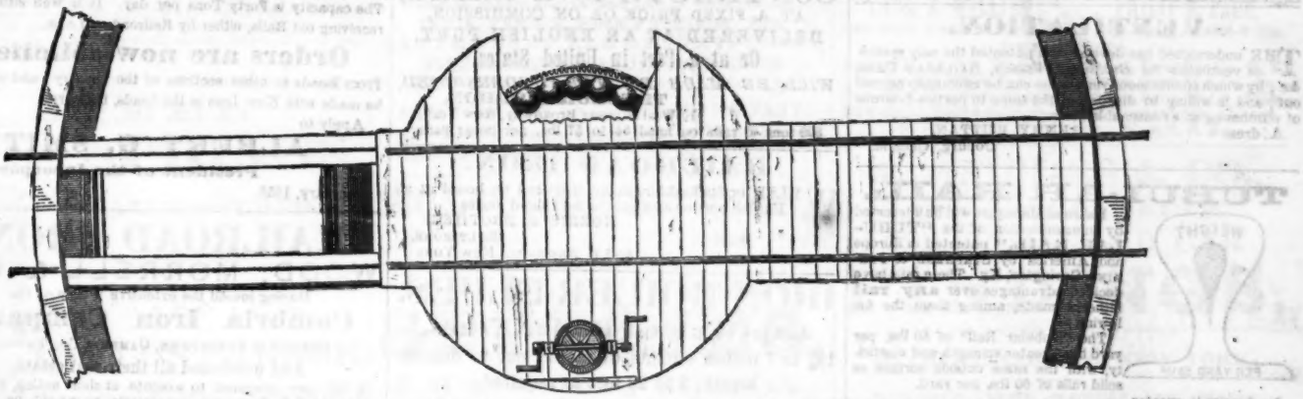
T. D. STETSON, Agent for procuring patents, No. 5 Tryon Row, (near City Hall). A circular with full information sent free by mail.

American correspondent *Prac. Mechanics' Jour.* from 1854.

WARD'S PATENT
SELF-CENTERING TURN-TABLE.



THIS TABLE is adapted to all localities and climates—is constructed without the **Central-Pivot,** or **Rubbing Journals,** thereby improving with use.—It is **cheap, strong** and **durable,** and works with **ease** and **freedom,** requiring less expensive foundations, and suitable for the turning platforms of swing-bridges, mortar-beds, pivot-gun-carriages, etc.



These TABLES are already introduced, and give general satisfaction.—They are manufactured in TOLEDO, Ohio, by **R. F. RUSSELL,** of the "Toledo Novelty Works," and in ALEXANDRIA, Virginia, by **THOMAS S. JAMEISON,** to either of whom orders may be sent, or to the undersigned, patentee, at AUBURN, Cayuga County, New York.
May 2nd, 1859.

W. H. WARD.

FINANCIAL.

G. M. TRACY & CO.,
STOCKS, BONDS, ETC.
LOANS NEGOTIATED.
No. 49 EXCHANGE PLACE,
NEW YORK.

W. P. STEELE & CO.,
BANKERS,
23 WILLIAM STREET, NEW YORK.
STOCKS and BONDS Bought and Sold on Commission.
Mercantile Paper and Loans negotiated.
Advances made on all approved Securities.
COLLECTIONS MADE throughout the United States and Canadas.

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AUCTIONEERS AND REAL ESTATE BROKERS,
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Under Messrs. DUNCAN, SHERMAN & Co.
SOLOMON DINGEE, CHARLES E. HOLDEN, } NEW YORK.
Stocks, Bonds, Mortgages, & Commercial Paper Bought & Sold.

REFERENCES.

Citizens' Bank, N.Y.	Hon. E. D Campbell, Lt. Gov., Wis.
Messrs. Thompson Bros., Bankers, "	Hon. Judge Lord, La Crosse, "
Messrs. Sewell, Ferris & Co., "	Jno. M. Levy, Banker, " "
Geo. P. Rogers, Esq., "	Hon. Franklin Steele, Minnesota.
A. Gridley, President McLean Co. Bank, Illinois.	A. & W. A. Saunders, Bankers, Mt. Pleasant, Iowa.

CINCINNATI STOCK EXCHANGE.
KIRK & CHEEVER,
Stock Brokers and Railroad Agents,
NO. 83 WEST THIRD STREET,
CINCINNATI, OHIO.
Railroads Stocks, Bonds, &c., bought and sold on commission. Regular sales at public auction at the MERCHANTS' EXCHANGE.

H MEIGS, Jr. & SMITH,
BANKERS and BROKERS,
39 WILLIAM STREET,
(FIRST BUILDING BELOW WALL STREET.)
STOCKS and BONDS Bought and Sold on Commission.
MERCANTILE PAPER and LOANS Negotiated.
INTEREST ALLOWED ON DEPOSITS.
HENRY MEIGS, Jr. WM. ALEX. SMITH.
NEW YORK, May 11, 1858.

SIMEON DRAPER, Auctioneer.
By SIMEON DRAPER,
OFFICE, **No. 36 PINE ST., NEW YORK.**
REGULAR AUCTION SALES
AT 36 PINE ST., **EVERY DAY.**
STOCKS and BONDS bought and sold at private sale
Sale every day at 1 o'clock. See Catalogue.

EUGENE THOMSON,
STOCK AUCTIONEER AND BROKER,
No. 37 William st., NEW YORK.
AUCTION SALES of STOCKS and BONDS every TUESDAY, at 12½ o'clock, at the Merchants' Exchange.
RAILROAD BANK, INSURANCE and other SECURITIES bought and sold at the BROKERS' BOARD, at PRIVATE SALE, or at AUCTION. All dividends payable in New York collected, and prompt remittances made.
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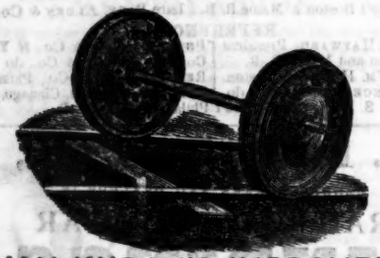

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